This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

LAURIE'S
SAILING DIRECTORY
FOR THE
ETHIOPIC
OR
Southern Atlantic Ocean;
TO THE
RIO DE LA PLATA, CAPE HORN,
AND THE
CAPE OF GOOD HOPE ETC.;
INCLUDING
THE ISLANDS BETWEEN THE TWO COASTS.

FOURTH EDITION,
REVISED AND CORRECTED, WITH MUCH RECENT INFORMATION.

PUBLISHED BY R. H. LAURIE,
No. 53, FLEET STREET, LONDON.

Price 14s. in Boards.

Geography

LAURIE'S
SAILING DIRECTORY
FOR
THE ETHIOPIC
OR
SOUTHERN ATLANTIC OCEAN;
INCLUDING THE
COASTS OF BRASIL, ETC.,
TO THE
RIO DE LA PLATA, THE COAST THENCE TO CAPE HORN,
AND THE AFRICAN COAST
TO
THE CAPE OF GOOD HOPE, ETC.;
INCLUDING THE ISLANDS BETWEEN THE TWO COASTS.

COMPOSED AND ARRANGED FROM A GREAT VARIETY OF DOCUMENTS,
WHICH INCLUDE MANY ORIGINAL AND VALUABLE COMMUNICATIONS, AS ENUMERATED IN THE WORK.

BY JOHN PURDY.

FOURTH EDITION, REVISED AND CORRECTED
BY ALEX. G. FINDLAY,
Fellow of the Royal Geographical Society.

LONDON:
PRINTED FOR RICHARD HOLMES LAURIE,
CHART SELLER TO THE ADMIRALTY, THE HON. CORPORATION OF TRINITY HOUSE, ETC.
No. 53, FLEET STREET.
1855.

201. e. 79.

TO CAPTAIN, NOW

REAR-ADMIRAL WILLIAM HENRY SMYTH,

OF THE ROYAL NAVY,

KNIGHT OF THE ORDER OF ST. FERDINAND AND MERIT, F.R.S., F.A.S., F.R.A.S., FELLOW OF THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON, OF THE SOCIETY FOR THE STATISTICS AND NATURAL HISTORY OF TUSCANY, AND OF THE ACADEMIES OF SCIENCES OF NAPLES AND PALERMO,—

AS A MEMORIAL OF EARLY FRIENDSHIP; A TESTIMONIAL OF AFFECTIONATE REGARD; AND A GRATEFUL ACKNOWLEDGMENT OF MANY PRIVATE AND IMPORTANT FAVOURS WHICH HAVE BEEN APPLIED TO THE IMPROVEMENT OF HYDROGRAPHY,

THIS VOLUME IS MOST RESPECTFULLY INSCRIBED,

BY JOHN PURDY.

[Entered at Stationers' Hall.]

Saldanha Bay, p. 526. On the page referred to is an account of the discovery of a copious spring in this Bay. We have just received a letter from Captain *Joseph Moor*, which informs us that this is calculated to mislead, as some malicious person has since filled up the excavation which exposed the spring. Consequently he could obtain only a very small quantity of very bad brackish water at the place indicated. After some difficulty, he got a small supply at the head of the Bay. This was in February, 1853.

London: J. & W. Rider, Printers, 14, Bartholomew Close.

MOST WILLINGLY WOULD WE HERE DISPLAY, IN DETAIL, THE NAMES OF ALL THOSE GENEROUS FRIENDS WHO HAVE CONTRIBUTED TO THE COMPLETION OF THIS WORK; BUT THEY WILL BE FOUND, IN THEIR PROPER PLACES, HEREAFTER, ASSEMBLED WITH THOSE OF THE MOST EMINENT NAVIGATORS WHO HAVE TOUCHED UPON THE SAME TOPICS: JUSTICE, HOWEVER REQUIRES AN ESPECIAL ACKNOWLEDGMENT OF OUR OBLIGATIONS TO THE "NAUTICAL MAGAZINE," THE "UNITED SERVICE JOURNAL," AND THE "JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY;" FOR TO THESE PERIODICALS WE HAVE BEEN INDEBTED FOR A LARGE COLLECTION OF INESTIMABE INFORMATION, AS WILL BE SEEN IN THE FOLLOWING PAGES.

J. P.

IN PREPARING THE PRESENT EDITION WE HAVE AVAILED OURSELVES OF NUMEROUS AUTHORITIES QUOTED THROUGHOUT THE WORK IN THE RESPECTIVE PAGES, AND TO WHOM WE RESPECTFULLY OFFER OUR ACKNOWLEDGMENTS. AMONG THOSE TO WHOM WE ARE MORE ESPECIALLY INDEBTED, THE NAMES OF CAPTAINS L. TARDY DE MONTRAVEL, LE COMTE E. BOUËT-WILLAUMEZ, AND CH. PH. DE KERHALLET, OF THE FRENCH MARINE; OF CAPTAIN J. J. DE LIMA, OF THE PORTUGUESE NAVY; AND DR. W. F. DANIELL, OF THE BRITISH ARMY MEDICAL STAFF, MAY BE PARTICULARIZED. IT IS TRUSTED THAT THE WORK WILL BE FOUND TO EXHIBIT AN ACCURATE PICTURE OF THE HYDROGRAPHY OF THE OCEAN IT DESCRIBES.

A. G. F.

⁂ COMMUNICATIONS, FOR THE FUTURE IMPROVEMENT OF THIS WORK, ARE RESPECTFULLY SOLICITED.

Mr. LAURIE

BEGS TO DIRECT PUBLIC ATTENTION TO THE FOLLOWING NEW WORKS.

PACIFIC OCEAN.

A DIRECTORY for the NAVIGATION of the PACIFIC OCEAN; with Descriptions of its Coasts, Islands, &c., from the Strait of Magalhaens to the Arctic Sea, and those of Asia and Australia; its Winds, Currents, and other Phenomena. In two volumes, 1,500 pages. Part I.—The Coasts of the Pacific Ocean. Part II.—The Islands, &c., of the Pacific Ocean. By Alex. G. Findlay, F.R.G.S. Price £3.

NORTHERN ATLANTIC OCEAN.

Memoir, Descriptive and Explanatory, to accompany the Charts of the Northern Atlantic Ocean; and comprising Instructions, general and particular, for the Navigation of that Sea. Octavo, boards, 14s.

INDIAN AND PACIFIC OCEANS.

A CHART of the INDIAN and part of the PACIFIC OCEANS; extending from 36° North latitude, to 51° South latitude; and from lon. 163° E. to lon. 13° W. of Greenwich. Engraved on four large sheets, price 16s.; or each sheet may be had separately at 5s. The North-West sheet includes the navigation of the Red Sea, Gulf of Persia, Bombay, Ceylon, and Madras, &c.; the South-West sheet, from the Cape of Good Hope, Madagascar, Mauritius, Kerguelen Land, &c,; the North-East sheet, from Calcutta to Manilla, Nagasaki, and New Guinea; the South-East sheet, the Coast of Australia and Van Diemen's Land, with enlarged plans of Port Jackson, and the Entrance to the Derwent River.

AUSTRALIA.

A CHART of the SOUTH-EASTERN COASTS of AUSTRALIA, between Moreton Bay and Investigator Group. With enlarged Plans of Port Stephens, Port Jackson and Sydney, Broken Bay, Botany Bay, Port Phillip, Entrance of Port Phillip, Entrance of Western Port, Bateman Bay, and Spencer and St. Vincent's Gulfs. On two sheets of double Elephant paper, price 10s. 6d.; mounted on cloth, 14s.; or on brown holland, 16s.

BRASIL.

A General Chart of the Coasts of Brasil, &c., from the River Para to Buenos Ayres, with particular Plans of the Harbours; constructed chiefly from the Surveys of the Baron Roussin and Captain William Hewett, adjusted by the later observations of Captain P. P. King, Captain Robert FitzRoy, and other officers of the British Royal Navy. Three large sheets, with Views of Land, and Directions, 12s.

THE ENGLISH CHANNEL.

Just completed, on a large scale, A CHART OF THE ENGLISH CHANNEL; comprehending the British Coasts from Lowestoff to Aberystwith; the Irish Coast from Wexford to Limerick; and the French Coast from Nieuport to the Saintes. With particular plans on enlarged scales, as follows:—1. The Downs, with the South and Queen's Channels; 2. The Coast of France, from Calais to Boulogne; 3. Newhaven, Beachy Head, and Pevensey; 4. Newhaven; 5. New Shoreham Harbour; 6. Portland New Refuge Harbour; 7. Cherbourg; 8. Environs of Ushant; 9. The Harbour of Brest. With full descriptionof the Tides, from the late observations, and other information. Constructed by Alex. G. Findlay, and accompanied by a Book of Sailing Directions. Price 12s.

EAST COAST OF ENGLAND AND SCOTLAND.

A CHART of the EAST COAST of ENGLAND and SCOTLAND, from Flamborough Head to the Orkney Islands, and thence to Cape Wrath. Engraved on three sheets of Atlas paper. With a Book of Sailing Directions. Price, together, 10s. 6d.

ISLE OF WIGHT, &c.

A CHART of the ISLE of WIGHT, with the Adjacent Coast, including Selsea and the Owers, Portsmouth, Southampton, &c., with enlarged Plans of Portsmouth Harbour, Needles Passage, Southampton Docks, &c., with Views. By I. Purdy. Printed on one large sheet of Double Elephant paper, price 5s.

CONTENTS.

NOTE.—*At the end of the Volume will be found a copious Index arranged alphabetically.*

SECTION I.

GENERAL TABLE OF THE POSITIONS, OR OF THE LATITUDES AND LONGITUDES OF THE PRINCIPAL POINTS, ETC., DESCRIBED IN THE WORK; WITH THE PAGES ON WHICH THE RESPECTIVE DESCRIPTIONS MAY BE FOUND.

	PAGE
1. The ISLANDS and SHOALS of the Ethiopic or Southern Atlantic Ocean; including Falkland Islands, South Georgia, the Sandwich Lands, and South Shetland	xiv.
2. The NORTHERN COAST of BRASIL, from Cape St. Roque, Westward, to the Rio Pará	xvii.
3. The EASTERN COAST of BRASIL, &c., from Cape St. Roque to Buenos Ayres	xviii.
4. The COAST of LA PLATA, PATAGONIA, &c., from Cape St. Antonio to and beyond Cape Horn	xxiii.
5. The COAST of AFRICA, from the RIVER GALLINAS to Cape Lopez, including the Islands of Fernando Po, Princes, St. Thomas, and Anno Bon	xxv.
6. The COAST of AFRICA, from CAPE LOPEZ or LOPO GONÇALVES to the Cape of Good Hope, and thence to Algoa Bay	xxvi.
NOTES on the PRECEDING TABLE, showing the AUTHORITIES, with some ADDITIONAL REMARKS; including the VARIATIONS of the Compass	xxx.

SECTION II.

GENERAL OBSERVATIONS ON THE WINDS, SEASONS, TIDES, AND CURRENTS; AND ON THE ANIMALS AND PHENOMENA OF THE OCEAN.

I. Of the WINDS and SEASONS 1

Trade Winds and Seasons, page 1; on the Eastern Coast of Brasil, 1; at the Entrance of the Plata, 2; Land and Sea Breezes, 3; Seasons of Brasil, 4; at Pará, 4; at Maranham, 5; at Seara, 5; at Fernando Noronha, 5; at the Rio Plata, 6; the Pamperos, 6; the Patagonian Coast, 6; at Staten Island, 7; at Tierra del Fuego, 7; in the vicinity of Cape Horn, 9.

Climate of the Islands Ascension, 10; St. Helena, and the Falklands, 11; of South Georgia, Sandwich Lands, and South Shetland, 12, 13.

Winds and Weather on the African Coast and Sea, 13; the Seasons, 14; Windward Coast, &c., 14; Tornadoes, 15; Gold Coast, 15; Islands of St. Thomas, &c., 16; Bight of Biafra, 18; Congo, &c., to the Cape of Good Hope, 18.

II. Of the Tides.—Northern Coast of Brasil, 19; Eastern Coast of Brasil, 20; Patagonia, &c., 20; Strait of Le Maire and Staten Island, 21; Falklands, 21; African Coast, 22.

III. Of the Currents.—Enumeration of the Currents, 22; Agulhas (or Lagullas) Current, 24; Eastern, or Counter Current of Agulhas, 27; the South African and Guinea Current, 27; Equatorial Current, 28; the Brasilian Currents, 29; Currents between Guinea and Brasil:—the Remarks of Captain Sabine, 30; Brasilian Currents, continued:—the Remarks of Captain Monteath, 31; thence to Cape Horn, and South Shetland:—Remarks by Captain Foster, &c., 31; the Southern Connecting Current, 33.

The Rollers of Ascension, Fernando Noronha, and St. Helena, 33—36 (and Appendix).

IV. Brief Extracts on the Animals and Phenomena of the Ocean.—Animals, &c., 34; the Dolphins, Sharks, &c., 36; Remora, Porpoises, Whales, and Turtle, 37; Birds, 38; Whales and Sea Elephants, 38; Albatross, Penguins, &c., 38; Stormy Petrel and Cape Pigeons, 39.

Luminosity of the Sea, 39; Medusæ, &c., 40, 41; Discoloured Water, 41—44; Indications of Wind, 44; Magallanic Clouds, 45; Mirage, 45; Temperature and Density of Sea Water, &c., 46—50.

SECTION III.

ON THE PASSAGES TO AND FROM BRASIL, PATAGONIA, AND CAPE HORN; ASCENSION, ST. HELENA, AND THE CAPE OF GOOD HOPE.

The Passage to Brasil, &c., 51; Remarks on Sailing Westward of the Canary Islands toward the Equator, 53; Remarks on Navigating between Rio Janeiro and Cape Horn, with the Returning Route, by Mr. Wm. Wood, 54; on proceeding to the Eastward of the Falkland Islands toward Cape Horn, &c., by Captain Monteath, 56; Remarks from the Journals of Captain Smart, 58; Route of Admiral Krusenstern, 60; Remarks by Captain Kotzebue, 60; Route of Captain Vancouver, Eastward, 60; of Captain Boulton, 61; Remarks by Captain Colnett, 61; Routes of La Pérouse, Kotzebue, &c., 62; Remarks by Captain Basil Hall, 62; by Captain Weddell, 63; Remarks upon the Passage to, and round Cape Horn, by Captain P. P. King, R.N., 65—67.

Routes for Returning from Brasil to Europe, including a Description of Bahia, 67—70.

Table of the Winds, Currents, and Variations of the Compass, as observed in the Voyages of the *Bayadère*, from France to Brasil, in 1819; from France to the River Plata, in 1821 and 1822; and from Brasil to France, in 1823; by the Baron Roussin, 70.

Directions for proceeding to the Island of Ascension, 74; Passages to and from St. Helena, 74; Passage from Ascension and St. Helena to the Coast of Africa, *by Captain Matson*, 76.

PASSAGE from BRASIL to the CAPE of GOOD HOPE, and from the Cape to England, 76; Tracks, Winds, and Weather, over the Bank of Agulhas, 77; Cape to England, 79; Extracts from the Journals of Captain Bristow, 80; of Captain Steuart, 82.

CAPE of GOOD HOPE to NORTH AMERICA; Directions by Captain Amasa Delano, 83.

SECTION IV.

DESCRIPTION OF THE ISLANDS AND SHOALS OF THE OCEAN, WITH DIRECTIONS FOR SAILING, ETC.

VOLCANIC REGION in the Vicinity of the Equator, and Description of the Shoals, &c., 84—89; Peñedo de S. Pedro, or St. Paul's Islets, 89; Fernando Noronha, 91; the Roccas, 94; Blaesdale's Coral Reef, 94; Shoal of Manoel Luis, 94; Isle of Trinidad, 94; Martin Vas Rocks, &c., 97; Abrolhos, or Brasil Banks, 97; Medeiros Rock, 99; Laurel Shoal, off the River Plata, 99.

The ISLAND of ASCENSION, 99; of ST. HELENA, 108.

Bank of Antonio Viana? 115; Saxemburg? 115; Grant's Breakers, 116; Isles of Tristan da Cunha, 117; Diego Alvarez, or Gough's Island, 124; Kattendyk's Droogte and Lennon's Reef, 125; Robson Reef, 125; Telemaque Rock, &c., 126; Ice Islands, &c., off the Cape of Good Hope, 128; Bouvet's, or Circumcision Island, 128; Isle Grande? 130; Montezuma Rock, 135; Ariel Rocks, 135.

FALKLAND ISLANDS, 136; Historical Account, 136; General Description, 140; Productions, 142; Penguins and Sea-Fowl, 143; Winds, Climate, &c., 145; Sea Weed, or Kelp, 148; Description of the Coasts:—East Falkland, 149; Berkeley Sound, 149; Port William, 151; Stanley Harbour, 151; Choiseul Sound, 152; Lafonia Peninsula, 153; Falkland Sound, 154; New Island, &c., 156; Port Egmont, 157; Beauchêne Island, 159.

L'Aigle Shoal? 160; Burdwood Bank, 160; Pottinger's Bank, 161; Aurora Isles? 161; Shag Rocks, 163; South Georgia, 163; The Sandwich Lands, 164; Routes of Captain Biscoe to the Eastward and South-eastward of the same, 165.

SOUTH SHETLAND, 166; the Winds, 171; the Tides, 171; Remarks on approaching South Shetland from the Northward, by Captain Fildes, 173; Louis Philippe Land, and Joinville Land, &c., 173; Islands of Alexander I. and Peter I., 175.

SECTION V.

THE NORTHERN COAST OF BRASIL, FROM CAPE ST. ROQUE, WESTWARD; INCLUDING ARACATI, CIARA, OR SEARA, TUTOYA, MARANHAM, AND PARA.

GENERAL REMARKS on the Coast, 175; Banks of St. Roque, 176.

PARTICULAR DESCRIPTION and Sailing Directions, 176; Aracati, 176; Coast continued, 179; Ciara, or Seara, 179; Directions, by the Hon. Captain Wellesley, 181; by Captain George Cheveley, 181; by Lieutenant D'Elissalde, 182; Coast Westward of Seara, 183; on coming in from Sea, 183; Description continued, 183; Jericoacoara, 184; the Pernaibaõ or Paranahiba, 184; the Lançoes, 186; Mangrove Coast, and Isle of Santa Anna, 186.

MARANHAM.—Captain Hewett's Description of, and Directions for, Maranham, 187; Particular Description, &c., 189; Tides, 190; Sailing Directions, by the Baron Roussin and others, 189; Route from the West Indies, or Southern Ports of North America, by the Hon. Captain Wellesley, 199; Directions generally, 199; Remarks and Instructions, by Lieutenant Stopford, R.N., 200; General Remarks on quitting Maranham *and returning* toward Europe, 201; Shoal of Manoel Luis, 202.

Maranham to Pará.—Province of Pará, 203; Bay of Cuma, 205; Isles of San Joâo, 205; Caïte Bay, 207; Salinas Bay, &c., 208; Mouth of the River Pará, 209; Colares, 212; Pará or Belem, 213; Sailing Directions for Parà, 215; Entering the River by the Passage de Dentro, 217; Remarks and Directions, by the Hon. Captain Wellesley, 220; Coast between Maranham and Pará, by Lieutenant Stopford, 221; Directions for Pará, by Mr. Richard Thomas, 222; by M. Arnous-Dessaulsays, 223; on the Rivers Pará and Amazons, 224.

SECTION VI.

THE EASTERN COASTS OF BRASIL, LA PLATA, PATAGONIA, ETC., FROM CAPE ST. ROQUE TO CAPE HORN, INCLUSIVE.

I. The Coast from Cape St. Roque to Pernambuco, 226; the Weather, &c., on the Eastern Coast of Brasil, 226; the Making of the Coast, 227; Description of the Recife, 228; Natal, or Rio Grande do Norte, 228; Rio Parahyba, 229; Itamaraca, 232; Paõ Amarello, 233.

Pernambuco and Olinda, Description of, 234; Cape St. Augustin, 235; Interior of Pernambuco, &c., 235; Particular Instructions for Pernambuco, &c., 239–244.

II. Pernambuco to Bahia, or Bay of All Saints, 244; Porto Calvo, &c., 245; Maçeio, or Maçayo, 245; Remarks, by the Hon. Captain de Roos, 246; Rio San Francisco, 248; the Cotandiba, 249; Vasabarris and Rio Real, 249; Itapicuru, 251; On the Winds, by the Baron Roussin, 251; Bahia, Description, 251; Sailing Directions for Bahia, 256.

III. Bahia to Porto Seguro and the Abrolhos, 259; Morro de St. Paulo, 259; Rio Camamu, and St. George dos Ilheos, 260; Belmonte, 260; Porto Seguro, &c., 261; Caravelhas, 262; the Itacolomi, 262; Prado, 263; the Abrolhos, or Islets of Sta. Barbara, 263; Captain FitzRoy's Remarks on the same, 265.

IV. The Coast, from the Abrolhos to Cape Frio, inclusive, 266; the River St. Matheo, &c., 266; Rio Seco and Rio Doce, 267; Espirito Santo, or Port Victoria, 267; River Guarapari, 268; Benevente, 268; Cape St. Thomé, 269; Morley Bank, 269; St. Ann's Bay, 270; Pilot, or Jervis Bank, 271; S. Joaõ de Macahe, 271; the Ancoras, and Papagayos, 272; Cape Frio, 272.

V. Cape Frio to Rio Janeiro, inclusive, 273; Position and Appearance, 273; Thetis Cove, 274; Cape Negro, 274; Currents in the Vicinity of Cape Frio, 275; Rio Janeiro, 275; Description of the Land between Cape Frio and Rio Janeiro, 276; On entering and leaving the Harbour, 277; Appearance of Rio, 277; Land and Sea Breezes, Tides, Landing Places, &c., 278; Description and Directions by Captain Hewett, 279; Directions by another Officer, 280; Directions for approaching from the Southward, by the Baron Roussin, 280; General Remarks on Rio, by Captain Monteath, 281; The Port Regulations, 282; Description of the Interior of Rio Janeiro, by Lieutenant Shillibeer, &c., 282.

VI. Rio Janeiro to Santos, 284; Marambaya, 284; the Ilha Grande, 285; Gairosu Bay, 286; St. Sebastian, &c., 286; thence to Santos, 287; Santos, and Rocks in the Vicinity, 288.

VII. Santos to the Rio de la Plata, inclusive, 288; River Iguape, 289; Cananea and Paranagua, 289; River Guaratuba, 290; Island of St. Catharine, 291; Admiral Von Krusenstern's Description, 291; that of the Baron Roussin, 292; of Captain Barral, 294; the Coast Southward of St. Catharine's, 295; the Rio Grande de St. Pedro, or Do Sul, 297; Mr. Luccock's Description, 297; Sailing Directions, by Captain Grant, 298; Reid Shoal, 298; by Captain Harrison, 299; Signals at the Rio Grande, 300; Official Directions, 301; by Captain Downward, 304; Winds, Tides, and Currents, between the Island of St. Catharine and the Rio Grande de St. Pedro, 305; St. Pedro to the Plata, 305; the Castelhos, 305.

VIII. The Rio de la Plata, 305; Rio Paraña, 306; Republic of Uruguay, 307; of Buenos Ayres, 307; Cape Santa Maria, 308; Maldonado, 308; Flores Isle, 309; Monte Video, 311; Colonia, 311; Hornos Isles, 311; Cape San Antonio and Pta. das Piedras, 311; Point Indio, 312; Buenos Ayres, 312; Landfalls, or Points of Recognisance on approaching the Plata, as described by Captain Barral, 313; Weather, Winds, &c., 314; Depths of the River at the Entrance and in the Offing, 315; Navigation at the Entrance and in the River, 316; Routes on proceeding to Buenos Ayres, 319; Passage between the Chico Bank and the South Shore, 319; Passage between the Ortiz and the North Coast, 319; Passage between the Ortiz and Chico Banks, 320; Routes to the Isles of Hornos, 320.

Descriptions and Remarks of British Officers, 320; Captain Heywood's Remarks concerning the Winds, Weather, Tides, Currents, Soundings, &c., in the Plata, 320; Winds, 321; Tides, 321; Soundings on advancing to the River, 322; Lobos to Flores, 323; English Bank, 323; Monte Video, 323; Navigation Southward of the English Bank, 324; Monte Video to Buenos Ayres, 325; Observations on the Anchorage of Buenos Ayres, 327; Port and Pilot Charges, 328; Description of Buenos Ayres, 329; Navigation Eastward of the River, by Captain Beechey, 333.

The Coasts of La Plata and Patagonia, from the River of La Plata to the Strait of Magalhaen, 336; Coast of the Pampas, and Inhabitants of the Country, 336; Remarks, by Captain R. FitzRoy, 336.

Description of the Coast, 337; Cape Corrientes, 339; Bahia Blanca, 339; Port Belgrano, and San Blas Bay, 340; Rio Negro, 341; Carmen, 342; St. Matthias Bay, 342; Tide Races, 343; Port San José, 343; Nuevo Gulf, 343; River Chupat, 344; Port Santa Elena, 344; Cape Two Bays, &c., 345; Port Malaspina, and Cape Three Points, 345; Port Desire, 346; Sea Bear Bay, 347; Spiring, or Ferrer Bay, 347; Watchman's Cape, 348; Port St. Julian, 348; Santa Cruz, 349; Coy Inlet, 351; Cape Fairweather, 352; River Gallegos, 351; Cape Virgins, 352; Strait of Magalhaens, 352; Captain King's Remarks on the Passage through the Strait, 352.

IX. The Coast of Tierra del Fuego to Cape Horn, &c., including Staten Island, 353; Description of Tierra del Fuego, 353; Strait of Le Maire, 354; Good Success Bay, 354; Staten Island, 355; Description of the Strait of Le Maire, 355; Tides, 356; Harbours, &c., of Staten Island, 356; From the Strait of Le Maire to Cape Horn, &c., 358; Hermite Isles, and Cape Horn, 358; St. Martin's Cove, 359; Islets of Diego Ramirez, 359; of St. Ildefonso, 360.

General Remarks on the Passage along the Eastern Coast of Patagonia, and around Cape Horn, &c., by Captain P. P. King and Captain F. W. Beechey, R.N., 360; Passage of the Blossom, 361; Home Passage of the same, 363.

SECTION VII.

THE COASTS OF AFRICA, FROM CAPE MOUNT TO CAPE LOPEZ, INCLUDING THE ISLANDS OF FERNANDO PO, PRINCES, ST. THOMAS, AND ANNO BON.

I. General Description and Directions, 364; Windward Coast, 364; Gold Coast, 364; the Natives, &c., 365; Climate, 366.

Descriptive Remarks and Sailing Directions for the Navigation to and from Western Africa, by Captain T. Midgley, 367; Passage from England, 319; Luminosity of the Sea, 368; Employment of Kroumen, 368; the Seasons, 369; Means of Preserving the Health of Seamen, 369; the Current, 370; the Homeward Passage, 370; Directions for Sailing from the Bight of Biafra to Sierra Leone, by Mr. J. Finlaison, 371; *by Captain Oliver,* R.N., 371.

MR. LAURIE

BEGS TO SUBMIT THE FOLLOWING RECENTLY PUBLISHED CHARTS TO PUBLIC NOTICE.

1. THE EASTERN COAST OF ENGLAND, from Orfordness to Flamborough Head. 2 Sheets, with Directions, 8*s*.
2. HARBOUR AND ENVIRONS OF HARWICH. 1 Sheet, 5*s*.
3. HOLY ISLAND, &c. 1 Large Sheet, 5*s*.
4. HARTLEPOOL BAY AND TOWN. 3*s*.
5. THE THAMES AND MEDWAY, from Orfordness and Folkestone to London. 2 Sheets, with Directions, 8*s*.
6. THE COASTS OF FRANCE, BELGIUM, AND THE NETHERLANDS, FROM BOULOGNE TO THE TEXEL. 9*s*.
7. THE STRAIT OF DOVER. 6*s*.
8. THE COASTS OF HOLLAND, GERMANY, AND DENMARK, from the Texel to the River Hever. 6*s*.
9. THE CATTEGAT, &c. With Directions. 12*s*.
10. THE SOUND AND DANISH GROUNDS. 5*s*.
11. THE ATLANTIC OR WESTERN OCEAN. 4 Sheets, 16s.
12. DITTO DITTO. 2 Sheets, 8*s*.
13. GUERNSEY, JERSEY, &c. 1 Sheet, with Directions, 5*s*.
14. THE EASTERN HARBOURS OF THE ENGLISH CHANNEL, 1 Sheet, 5*s*.
15. THE CENTRAL HARBOURS OF DITTO 1 Sheet, 5*s*.
16. THE WESTERN HARBOURS OF DITTO 1 Sheet, 5*s*.
17. THE ISLE OF WIGHT, &c., from Surveys of Capt. Sheringham, &c. 1 Sheet, 5*s*.
18. BRISTOL TO CORK. 2 Sheets, 8*s*.
19. THE BRISTOL CHANNEL (*from the late Surveys*). 2 Sheets, with Directions, 8*s*.
20. THE BAY OF BISCAY. 2 Sheets, with Directions, 8*s*.
21. SPAIN AND PORTUGAL. 2 Sheets, with Directions, 8*s*.
22. THE MEDITERRANEAN SEA. 3 Sheets, with Directions, 14*s*.
23. THE ARCHIPELAGO, &c. 2 Sheets, 10*s*. 6*d*.
24. THE AZORES. 1 Sheet, 5*s*.
25. THE CANARIES. 1 Sheet, 5*s*.
26. THE BERMUDA ISLANDS. With Directions, 5*s*.; or coloured, 6*s*.
27. THE ETHIOPIC, OR SOUTH ATLANTIC OCEAN. 4 Sheets, 16*s*.
28. DITTO DITTO 2 Sheets, 8*s*.
29. THE BRITISH ISLES TO THE CAPE OF GOOD HOPE. 2 Sheets, 10*s*. 6*d*.
30. THE INDIAN AND PACIFIC OCEANS. Comprised in 12 Sheets, £3.
31. THE NORTHERN PART OF THE INDIAN OCEAN. 3 Sheets, 16*s*.
32. THE SOUTHERN PART OF DITTO 3 Sheets, 16*s*.
33. THE NORTH PACIFIC OCEAN. 3 Sheets, 14*s*.
34. THE SOUTH PACIFIC. 3 Sheets, 14*s*.
35. THE COAST OF CHINA, FROM CANTON TO NANKING. 3 Sheets, 14*s*.

THE ETHIOPIC

OR

SOUTHERN ATLANTIC OCEAN.

SECTION I.

GENERAL TABLE OF THE POSITIONS, OR OF THE LATITUDES AND LONGITUDES OF THE PRINCIPAL POINTS, ETC., DESCRIBED HEREAFTER; WITH THE PAGES ON WHICH THE RESPECTIVE DESCRIPTIONS MAY BE FOUND.

⁂ It is to be observed that, THROUGHOUT THIS WORK, the GIVEN LONGITUDE is the LONGITUDE from GREENWICH. The BEARINGS and COURSES are those by COMPASS, unless where otherwise expressed: BUT THOSE GIVEN THUS [*E.N.E.*] SIGNIFY THE TRUE; and the GIVEN DIRECTION of WIND, TIDE, and CURRENT, is always to be considered as the TRUE. The depths are those at low water, spring tides; and the miles geographic, of 60 to a degree.

The FIGURES in PARENTHESES, given in the following TABLE, thus [3], refer to the subjoined NOTES.

The Table is arranged as follows:—

1.—The Islands and Shoals of the Ethiopic, or Southern Atlantic Ocean; including Falkland Islands, South Georgia, the Sandwich Lands, South Shetlands, &c.

2.—The Northern Coast of Brasil, from Cape St. Roque westward to the Rio Pará.

3.—The Eastern Coast of Brasil, from Cape St. Roque to Buenos Ayres.

4.—The Coasts of La Plata, Patagonia, &c., from Cape San Antonio to and beyond Cape Horn.

5.—The Coast of Africa, from the River Galenas to Cape Lopez, including the Islands of Fernando Po, Princes, St. Thomas, and Anno Bon.

6.—The Coast of Africa, *from* Cape Lopez to the Cape of Good Hope, and thence *to Algoa Bay, &c.*

	Latitude.	Longitude.	Pages.
ISLE of GEORGIA, or SOUTH GEORGIA:			
	° ′ ″	° ′ ″	
Willis Island	54 0 0 S.	38 23 0 W.	162
Adventure Bay the head of	54 2 48	38 8 4	163
Cape North [8]	54 4 45	38 15 0	162
Cooper's Island	54 57 0	36 4 20	163
Cape George	54 17 0	36 22 30	163
Clerke's Rocks	55 5 30	34 42 0	163
SANDWICH LANDS:			
Traverse Islands, Volcano	55 57 0	26 33 0	165
Candlemas Isles [9]	57 10 0	27 13 0	165, 166
Cape Montague	58 33 0	26 46 0	165
Southern Thulè	59 34 0	27 45 0	165
Morrell's Western Point	59 35 10	27 42 30	166
SOUTH SHETLANDS, &c. [10]			
Adelaide Island; W. point	67 14 0	68 26 0	169
Mount William, Graham's Land	64 45 0	63 51 0	169
Cape Possession	63 26 0	64 6 0	169
Farewell Rocks	63 33 0	60 45 0	169
Trinity Land Tower Hill	63 29 0	60 26 0	170
Hope Isle ..	63 5 0	57 4 0	170
Saddle Isle, on the East *about*	60 37 0	44 45 0	170
Astrolabe Island; E. point	63 17 0	58 13 0	174
Mount Jacqueminot, Louis Philippe Land	63 17 0	57 36 0	174
Daussy Island	63 2 0	56 58 0	174
Joinville Island; N.W. point	62 59 0	56 33 0	174
Mount Percy	63 16 0	55 38 0	174
Cape Purvis	63 37 0	55 46 0	...
Cape Gordon	63 48 0	57 21 0	...
Cockburn I., 2,760 feet	64 12 0	56 50 0	...
Cape Seymour, S. point of Erebus and Terror Gulf, 1843	64 13 0	56 31 0	...
Cape Lockyer	64 30 0	57 46 0	...
Cape Foster	64 26 0	58 12 0	...
Mount Haddington, 7,050 feet	64 14 0	58 3 0	...
Deception Isle; Pendulum Cove	62 56 11	60 32 0	172
Smith's Island; Mount Beaufort (6,600 *feet high*)	62 52 0	63 13 0	172
South Point	62 39 0	61 27 0	172
Cape Shirreff	62 26 0	60 52 0	172
Desolation Isle	62 25 0	60 30 0	172
Table Island	62 20 0	59 40 0	173
King George's Island; N.W. or Round Point	61 57 0	58 42 0	172
Cape Melville...	61 56 0	58 1 0	...
Penguin Isle, East side of St. George's Bay	62 12 0	58 5 0	...
Fildes' Strait; S.E. entrance	62 19 0	58 45 0	
Bridgeman's Isle; Volcano	62 4 0	57 0 0	173
Aspland's Island; N. point	61 27 0	56 20 0	...
Cape Belsham, the N. point of Elephant Island	60 57 0	54 56 0	...
Cornwallis Island; centre	61 0 0	54 23 0	...
Lloyd's Promontory, N. end of Clarence Island	60 58 0	53 45 0	...
Cape Bowles, S. end of the same	58 18 0	53 32 0	...

	Latitude.	Longitude.	Pages.
SOUTH ORKNEYS, or POWELL'S GROUP:			
Inaccessible Isles; centre..................	60° 33′ 0″ S.	46° 55′ 0″ W.	170
Cape Faraday, the N.E. point of Lewthwaite's Strait	60 39 0	45 1 0	170
Cape Dundas, Laurie I., E. point	60 46 0	44 10 0	170
Island of Alexander I.	68 57 0	73 0 0	175
Island of Peter I.	68 0 0	91 0 0	175
II.—The NORTHERN COAST of BRASIL, from CAPE ST. ROQUE, WESTWARD, to the RIO PARA ....[11]			
CAPE SAN ROQUE; the summit of the cliff	5 28 17 S.	35 17 23 W.	175
Point Petetinga; the base	5 21 35	35 19 34	175
Point Gamalera; the down	5 12 24	35 30 6	175
Point Toiro or Calcanhar; the N.E. extremity of Brasil; summit	5 8 20	35 30 44	175
Lavandeira Breaker	4 54 40	36 0 13	176
Breakers on the Urcas	4 51 32	36 34 33	176
Point Tubaraõ; North down	5 1 49	36 26 8	176
Point do Mel	4 55 17	36 57 13	176, 179
Morro Tibaõ	4 49 20	37 15 48	177
Reteiro Pequeño; remarkable hummock...	4 48 16	37 7 10	177
Reteiro Grande; hummock on the point...	4 36 20	37 30 53	177
Morro of Aracati (*an inland hill*)...........	3 42 10	37 52 8	177
Mouth of the Jaguaripe; red bluff and battery	4 23 30	37 47 7	177, 179
Point Macoripe ....[12]	3 41 50	38 28 49	179
CIARA, otherwise Ceara, or Seara; steeple [13]	3 42 58	38 32 56	179—183
Hills of Ciara, or Seara; as seen on the meridian:			
1st summit..................................	3 39 27	38 46 13	179
2nd summit	3 46 22	38 46 46	179
3rd summit	3 50 24	38 41 13	179
4th summit.................................	3 53 20	38 44 15	179
5th summit	3 58 0	38 39 13	179
Morro of Opicem	3 33 30	38 47 17	180
Curú; the village ....[14]	3 30 0	38 51 7	180
Hummock on down of Parati	3 24 10	38 57 23	180
Hummock, or Mandahu Point	3 10 0	39 15 30	180
Morro, or Mount Melançia	3 11 40	39 17 29	183
Pernambuquinho	3 1 50	39 35 26	180
Rio dos Patos; the entrance	2 58 50	39 38 1	180
Mount Meruoca; the summit	3 17 55	40 3 29	180
Point of Jericoácoará; highest land	2 47 28	40 25 23	184
Hummock near the shore	2 50 22	40 37 23	184
Morro Ticondiba; the summit...............	3 10 37	40 34 43	184
Rio Camucim, or Camosin; hummock at the entrance	2 50 0	40 42 58	184
Mount Tapuya; the Western summit ...	2 58 25	40 48 37	184
Rio Tapuya; entrance	2 50 25	40 48 18	184
Rio Iguarassu; entrance, East point	2 52 27	41 16 10	184
Hummock on a sandy isle	2 48 57	41 40 49	184
Entrance of a River, *Tutoya* or *Tutoia*?[15]	2 41 13	42 10 9	184, 185
RIO DAS PERGUIÇAS, or Perjuizas; Eastern point..................................	2 41 27	42 25 9	185
LANÇOES GRANDES; Eastern point	2 26 12	42 57 59	185

	Latitude.	Longitude.	Pages.
NORTHERN COAST OF BRASIL, CONTINUED.			
Hummock in the Lançoes Grandes	2° 24′ 12″ S.	43° 3′ 25″ W.	185, 186
Another Hummock in the same	2 23 22	43 7 6	186
Morro Alegre	2 20 17	43 11 12	186
St. Anna's Breakers; Eastern point	2 12 38	43 31 51	186, 188
St. Anna's Lighthouse (*a square tower; light revolving*) [16]	2 16 18	43 43 41	187
Breakers of the Coroã Grande:			
Middle of the Northern	2 10 50	43 59 53	188
———— N.W.	2 13 15	44 6 18	188
———— West	2 17 0	44 7 28	188
MARANHAM ISLAND; white down on the North side	2 24 36	44 6 30	189
Fort St. Marcos; flagstaff	2 28 22	44 18 15	190
Fort St. Antonio das Areias; flagstaff	2 29 24	44 19 8	193
ST. LUIZ DE MARANHAM; steeple of the Cathedral [17]	2 30 44	44 18 21	189
Point de Bom Fim; house	2 30 42	44 19 18	189
Point de Guia; red house	2 30 43	44 20 53	193
Point Ataki, or Taqui; Western extremity	2 33 4	44 22 44	199
Rock, East of the Isle Medo	2 30 19	44 21 37	199
Alcantara; Western steeple	2 23 33	44 25 19	194
Point Tatinga, or Alcantara; the cliff	2 23 38	44 23 33	198
Point Janauba; red cliffy shore	2 22 4	44 22 36	199
Point Piraremo; middle of the cliff	2 19 26	44 21 45	200
Mount Alegre; the summit	2 17 16	44 22 17	200
Point Carnaveros	2 12 7	44 23 13	200
Monte Itacolomi, or Itacolumi; Lighthouse *revolving light*	2 8 38	44 26 45	200
Shoal of Manoel Luiz; Western rock	0 51 25	44 16 56	202, 203
Anchorage of La Bayadère, before the same	0 52 3	44 17 9	202
Vigia, seen by M. Sylva	0 32 0	44 17 14	203
St. Joaõ, or St. John's Island; N.E. extremity	1 14 30	44 53 57	205
Cape Gurupi	0 54 5	46 11 3	206
Point Atalaia; Lighthouse, *fixed light, with flash every two minutes*	0 33 5	47 16 47	208, 216,
Point Tijioca	0 34 0	47 51 18	210
PARA', Fort San Pedro	1 21 0	48 30 12	213
III.—EASTERN COAST of BRASIL, from CAPE ST. ROQUE to BUENOS AYRES, &c.			
CAPE SAN ROQUE; summit of the cliff [19]	5 28 17	35 17 21	226
Rio Searamirim; South point	5 41 0	35 15 39	226
Forte of Rio Grande do Norte	5 45 0	35 14 42	228
Point Negra; extremity	5 52 52	35 12 18	229
Point Gureo	6 1 49	35 6 24	229
Anse de Prinji	6 10 12	35 6 56	229
Point Pipa	6 12 53	35 3 53	229
Rio Cunhaõ; entrance, South side	6 17 10	35 3 36	229
Bahia Fermosa; South point	6 23 12	35 0 23	229
Bahia Traiçaõ; North point	6 41 15	34 57 34	228
Point Lucena	6 53 35	34 42 46	230
Church of Santa Theresa	6 56 57	34 53 8	230
Fort Cabedello	6 57 30	34 50 22	220
Parahyba do Norte; steeple	7 6 3	34 53 11	230—232
Cape Branco; cliff	7 8 22	34 48 16	230

EASTERN COAST OF BRASIL, CONT.	Latitude.			Longitude.			Pages.
	°	′	″	°	′	″	
Nossa Senhora da Penha	7	9	0 S.	34	48	1 W.	232
Cliff of Point Guya	7	26	25	34	47	12	232
Rio Grande de Goyana; entrance	7	30	40	34	48	20	232
Point das Pedras; cliff	7	35	9	34	47	33	232
Rio Goyana; entrance	7	30	44	34	49	6	232
Rio Ay; Fort at the entrance	7	47	13	34	50	33	232
Nossa Senhora Farinha..........................	7	56	43	34	50	34	232
Olinda; Western tower	8	0	59	34	50	46	234
PERNAMBUCO; Fort Picaõ	8	3	30	34	51	48	234
———————; Tower of Recife [20]	8	4	7	34	52	42	234
———————; Tower of Boã-Vista	8	3	36	34	53	1	234
Freguezia de St. Antonio	8	8	8	34	53	58	234
Freguezia dos Affogados	8	6	16	34	53	6	234
Nossa Senhora do Rosario.....................	8	9	18	34	56	50	239
Chapel in the Downs............................	8	18	40	34	58	11	239
Cape St. Augustine; the summit	8	20	41	34	56	40	239, 244
Rio Ipojuca; entrance	8	23	2	34	58	30	244
Mount Sellada; Southern piton	8	25	19	35	11	2	244
Village of Maracay	8	29	26	34	59	35	244
A Chapel	8	30	36	35	1	4	244
Isles of San Aleixo	8	35	49	35	1	44	244
Rio Formosa; Chapel at the entrance ...	8	39	40	35.	4	20	...
Fort of Tamandaré	8	43	24	35	5	58	245
San Bento	9	4	56	35	16	55	244
Village of Quinta	9	16	18	35	22	23	...
La Forquilla	9	9	56	35	48	13	...
Porto Franceses; the point	9	39	45	35	41	17	248
Village on the Elbow of the Rio Alagoas	9	39	32	35	46	31	247
Morro of St. Antonio...........................	9	22	17	35	35	3	...
Rio San Francisco; North point	10	28	15	36	22	47	248
———————; South point............	10	28	50	36	23	20	248
Mountains of Itabayanna; summit.........	10	47	10	37	23	3	248
Rio Vasa Barris; the Bar......................	11	11	0	37	17	2	249
Os Tres Irmaõs, or the Three Brothers ...	11	15	37	37	10	9	249
Rio Real; South point	11	28	4	37	20	24	249
Tower of Gracia da Vila	12	32	26	38	0	54	250
Rio Jacuipe; entrance	12	41	52	38	7	39	...
Abrantes; signal mast on the South	12	51	39	38	16	50	...
Itapuan; the signal mast......................	12	57	3	38	21	39	251
Rock of Itapuan	12	57	58	38	21	50	251
Itapuanzinho; the point	13	0	59	38	28	6	251
———————; the flagstaff	13	1	3	38	29	13	251
BAHIA; the Lighthouse on Fort St. Antonio.......................................[21]	13	0	45	38	31	45	251—259
Nossa Senhora de Bom Fim; the steeple...	12	55	40	38	30	19	251—259
Nossa Senhora de Mont-Serate; the steeple	12	55	58	38	31	0	251—259
Piton of the Isle dos Frades	12	49	28	38	37	56	...
Morro of St. Amaro, in Itaporica	13	1	8	38	45	26	259
Knoll of Conceiçaó	13	2	33	38	41	19	...
Point Jaburu, in Itaporica	12	57	36	38	35	52	259
Nossa Senhora da Penha	12	59	16	38	36	35	259
Point Aratuba	13	5	7	38	44	23	...
Point Caixo-Pregos	13	7	33	38	46	32	...
Morro of San Paulo	13	21	53	38	54	19	257
Hill W.N.W. from the same	13	19	27	39	0	16	259
Isle Boypeda; one of the summits	13	37	43	38	56	46	259
Isle Quiepé	13	50	58	38	56	46	...
Villa de Contas	14	18	6	39	0	13	260
Os *Ilheos; the largest rock*	14	47	23	38	59	9	260

EASTERN COAST OF BRASIL, CONT.	Latitude.	Longitude.	Pages
Town of San Jorge dos Ilheos	14° 49′ 25″ S.	39° 0′ 8″ W.	260
Village of Unha	14 59 7	38 5 43	260
Morro of Commandatuba; the S.E. summit	15 22 8	39 7 31	260
Village of Commandatuba	15 25 20	38 56 20	260
Town of Belmonte	15 51 4	38 54 11	260
Santa Cruz; the steeple	16 18 50	39 1 47	260
Porto Seguro; steeple of the Cathedral ...	16 26 50	39 3 4	261
Nossa Senhòra da Judea; Chapel	16 29 25	39 13 20	261
Monte Pascoal, or Mount Pascal; the summit	16 54 8	39 25 11	262
Mount Joaõ de Liam; the summit	17 0 26	39 36 28	263
Mouth of the Rio Cramimuan	16 51 12	39 19 15	263
Colombiana	17 6 1	39 11 44	263
Villa Prado; flagstaff on the Fort	17 21 28	39 12 5	262
Paracel dos Paredes; N.E. point	17 56 45	38 54 6	264
ABROLHOS ISLES; North-easternmost Rock [22]	17 57 27	38 41 36	263—2
————; Sta. Barbara; Eastern summit	17 57 44	38 41 40	263—2
Rio de San Matheo; North point	18 37 10	39 44 51	266
Rio Doce; West point of the entrance ...	19 36 57	39 51 7	267
Serra dos Reis Magos; Southern summit	19 50 27	40 21 54	267
Morro Almeyda	19 57 20	40 19 25	...
Mestre Alvaro; the summit	20 8 54	40 21 57	267
O Tubaraõ; Rock near the Cape	20 16 23	40 16 1	267
Cape Tubaraõ; S.W. point	20 16 22	40 17 15	267
VICTORIA; Piton to the North of the town	20 17 49	40 22 32	267
Dangerous Rock in the Bay of Espirito Santo	20 18 32	40 17 32	268
Cape Penedo, in the River	20 19 16	40 21 14	267
Nossa Senhora da Penha; Church	20 19 34	40 19 46	267
Rock Balea, in the entrance of the River...	20 18 50	40 18 48	267
Mount Moreno; the summit	20 19 23	40 19 11	268
Pacotes Rocks; the largest	20 21 2	40 16 15	267
Isle Jicu; the summit	20 23 9	40 20 16	268
Point Jicu; the summit	20 26 1	40 21 47	268
Ilbas Razas (Low Isles); the middle	20 42 42	40 24 17	268
Isle Calvada; the middle	20 44 8	40 26 54	268
Guarapari; steeple on the South point of the Bay	20 43 56	40 32 28	268
Morro Bo (an insulated mountain)	20 47 34	40 41 2	...
Morro of Benevento; summit	20 55 21	40 49 10	268
Serra de Guarapari; Western summit	20 50 15	41 8 3	268
Serro do Pico; highest part	21 1 30	41 18 47	...
————; Forked Hill, to the West	20 58 23	41 37 21	...
Mount Campos; Southern summit	21 22 38	41 27 42	...
Mountains of Furado; the highest	21 49 58	41 43 10	270
CAPE SAN THOMÉ	22 2 0	40 55 40	269
St. Anna's Isles; the largest	22 25 0	41 41 13	270
Peak of Frade de Macahé	22 12 2	42 4 0	271
Morro of San Joaõ; summit	22 32 26	42 1 10	272
Isle Branca, or White Isle; summit	22 43 42	41 45 0	272
Cape Busios; extremity	22 46 3	41 51 44	272
Ancoras Isles; the Easternmost	22 46 26	41 45 48	272
Papagayos Isles; the N.E Isle	22 52 9	41 53 11	272
CAPE FRIO; Northern summit [23]	22 59 55	41 57 24	272
————; the Southern point	23 1 18	41 58 10	272
Cape Negro; the point	22 57 10	42 40 33	274
————; *highest* hill to the North ...	22 52 38	42 39 5	274

	Latitude.	Longitude.	Pages.
RN COAST OF BRASIL, CONT.			
	° ′ ″	° ′ ″	
; Southern Isle	23 0 53 S.	42 55 32 W.	274
ighthouse	23 4 17	43 9 20	275
or Round Isle; summit	23 4 45	43 11 43	276
nhora da Gloria; the steeple......	22 54 42	43 10 13	276
NEIRO; Sugar-loaf (1,292ft.) [24]	22 57 14	43 9 7	275—284
———; Vilganhon flagstaff......	22 54 31	43 8 55	278, 280
———; Isle Ratos, or Rat Isle...	22 53 16	43 9 38	278
———; Morro Corcovado; (1,580ft.)	22 56 13	43 12 41	277
a, or Gavia	22 59 0	43 17 22	
Marambaya; a flat rock	23 7 47	43 51 57	276
Marambaya; summit (700 feet)	23 5 9	44 2 58	285
orge Grego; S.W. point............	23 15 11	44 14 6	280, 284
aio; summit of the large Isle ...	23 10 55	44 15 47	285
aya on Ilha Grande	23 15 12	44 24 52	285
atinga; summit of the Islet	23 18 30	44 33 26	285
airoçu; Eastern summit	23 20 2	44 37 43	285
Parati; summit	23 19 28	44 48 28	285
ves; the largest	23 25 54	44 52 18	...
rossa	23 28 15	45 1 44	...
oria; summit	23 47 42	45 8 14	...
sles; the S.E. Isle	23 44 27	45 0 28	286
Porcos; Southern hillock.........	23 33 38	45 4 42	286
r-Virado; summit	23 34 7	45 8 44	286
s Ostres; extremity	23 34 52	45 11 48	...
ELLA da PRINCESA; the steeple	23 46 52	45 21 21	...
rasonungo, on St. Sebastian's......	23 57 32	45 14 57	287
ptuba, on the same..................	22 56 3	45 24 31	286
le Trigo, or the Corn-stack.........	23 51 4	45 46 26	287
es; the largest.........................	24 6 5	45 41 11	287
; the Arsenal	23 55 51	46 19 49	287
; summit of the Moela	24 3 6	46 16 31	288
ypu, at the entrance of Santos ...	24 1 11	46 24 59	288
Santos	24 18 0	46 10 10	288
, or Little Queimada	24 21 26	46 49 11	288
a Grande..................................	24 28 21	46 41 14	288
ardoz	24 58 45	48 7 5	288
A; Bom Abrigo I....................	25 6 49	47 50 35	289
Island; centre (160 feet)	25 21 29	48 2 34	289
el; Southern summit	25 32 43	48 18 39	289
GUA; Fort on the Bar	25 30 14	48 18 54	289
—; West point of Cotinga Isle	25 29 50	48 28 34	289
—; Church of Sta. Antonia......	25 25 42	48 39 0	289
cks; the largest	25 45 49	48 23 4	289
Rocks; the largest	25 50 20	48 25 38	290
iuva	25 49 30	48 34 22	290
ao Diaz, on the South side of S. Francisco	26 6 33	48 32 40	...
te Isles; Southern Isle	26 20 54	48 31 44	290
nedios; Southern Isle	26 29 28	48 34 43	290
pacoruya; North side	26 47 18	48 37 5	290
imbo, on the continent	27 11 6	48 34 54	290
ank; 14 fathoms	26 44 0	48 5 0	290
ST. CATHARINE and OPPOSITE COAST...............[25]			290
Isle; the summit	27 16 47	48 23 39	
STA. CRUZ D'ANHATOMIRIM [26]	27 25 32	48 33 58	290 291
el; the Church (on the continent)	27 27 15	48 35 14	291

	Latitude.	Longitude.	Pages.
EASTERN COAST OF BRASIL, CONT.	° ′ ″	° ′ ″	
Sant' Antonio; the Church (on the island)	27 30 17 S.	48 28 11 W.	
Town of Nossa Senhora do Desterro	27 35 25	48 30 52	293
San José; the Church (on the continent)	27 36 18	48 35 2	293
Le Ribeiraõ; the Church (on the island)	27 42 18	48 32 11	296
Enceada do Brito; the Church	27 46 15	48 36 42	295
The Isle dos Cardos	27 48 38	48 33 29	294
South Fort, on the Isle of N.S. da Conçeicaõ	27 50 9	48 33 11	294
Islet Badejo	27 26 6	48 19 12	294
Isle Aranhas; the largest	27 29 42	48 19 48	294
Isle Xavier	27 37 18	48 22 0	294
Isle Campexe	27 42 12	48 26 30	294
Moleques do Sul; the largest	27 49 49	48 24 10	294
Isles Tres Irmaos, or Three Brothers; Eastern Isle	27 50 10	48 27 45	294
Point Catheta	27 35 34	48 23 36	295
—— Grossa	27 48 18	48 28 12	295
—— de Lagohina	27 46 18	48 28 13	295
—— dos Frailes (Friars' Point)	27 50 0	48 32 12	295
—— dos Naufragados	27 49 47	48 32 55	295
—— Pinheira	27 53 8	48 39 13	295
Isle do Coral	27 55 10	48 30 49	295
Cape Guaratuba	28 6 12	48 36 28	...
—— Cirui	27 59 12	48 35 46	...
—— Uvidor	28 12 24	48 36 28	...
Islet Tocoromi	28 19 29	48 32 6	295
Point Viraquera	28 13 25	48 35 24	...
Isle das Araras	28 18 0	48 33 8	295
Point Bituba	28 16 5	48 35 6	295
Isle Lobos de la Laguna	28 24 36	48 41 40	295
Morro da Barra	28 29 18	48 46 28	...
Town of Laguna	28 29 23	48 47 0	295
Cape Sta. Marta Pequeno	28 38 32	48 47 16	295
—— Sta. Marta Grande	28 39 0	48 43 32	295
Barra Velha	28 51 30	49 12 45	...
As Torres	29 28 0	49 56 20	296
Praya or Beach of Fernambuco; Eastern part	29 52 0	49 55 36	296
———— of d'Estreito; Eastern part	31 12 0	50 36 36	296, 299
Rio Grande de S. Pedro; the Lighthouse	32 7 20	52 5 36	295, 305
Bank of Sand and Shells; Eastern part	33 44 0	52 28 14	...
Los Castillos; the Eastern Rock	34 24 30	53 38 28	307
RIO DE LA PLATA.			
Cape Sta. Maria, or Rocha	34 39 1	54 7 8	308
Isle of Lobos; centre	35 0 51	54 51 11	313
Town of Maldonado; the Tower	34 53 27	54 56 36	308
Isle Goriti; Well at N.E. end	34 57 2	54 57 28	309
Ballena, or Whale Point	34 53 44	55 1 31	309
Punta Negra, or Black Point	34 53 1	55 14 31	309
——— d'Afilar	34 47 15	55 28 31	309
Punta das Piedras Negras de Sta. Rosa	34 46 30	55 42 31	309
Isle of Flores; Light tower on S.W. end	34 56 19	55 55 10	309
Monte Video; the Cathedral	34 54 37	56 11 37	310
Isle Ratos, Monte Video [27]	34 53 21	56 13 32	310
Hill and Lighthouse of Monte Video	34 53 21	56 15 6	310
Point Espinilla	34 49 50	56 24 32	311
The Panella Reef	34 54 45	56 24 37	311
Punta del Saucé	34 25 21	57 24 58	311
Colonia del Sacramento; Lighthouse	34 28 14	57 49 14	311

LA PLATA, CONTINUED:—	Latitude.	Longitude.	Pages.
UTH SIDE OF THE PLATA.			
	° ′ ″	° ′ ″	
N ANTONIO; North extremity...	36 18 30 S.	56 46 8 W.	311, 313, 338
); entrance	35 43 15	57 19 32	338
Juan Jeronimo	35 29 15	57 19 7	338
lras of San Borombon	35 26 50	57 5 28	338
lvador Grande	35 19 10	57 8 23	...
Indio, or Indian Point............	35 15 20	57 10 19	312
u Tree of the Magdalena.........	35 2 45	57 28 49	312
a; the Church	35 2 14	57 31 19	312
oint	34 54 56	57 42 45	312
San Jago	34 50 16	57 53 42	312
Lara	34 47 14	58 0 2	312
AYRES; Mandeville House	34 36 18	58 22 44	...
———— Landing Place, mole	34 35 30	58 22 10	313
AST from the RIVER PLATA o CAPE HORN, &c.			
Point; S.E. summit...............	36 59 5	56 41 2	338
uito, Bar of	36 37 10	57 22 4	338
ientes; East summit..............	38 5 30	57 29 34	339
ntana................................	38 11 45	61 56 37	339
meneg	38 22 40	57 52 4	339
nt; Cliff summit	38 39 0	58 47 49	339
ntina	38 43 50	62 15 0	340
ermoso	38 50 50	61 40 4	339
Head; summit	39 26 30	62 2 55	340
River; mouth	39 51 40	62 4 39	340
int, S. Blas Bay; summit	40 36 10	62 8 59	340
Fort....................................	40 48 15	62 58 25	342
nt......................................	40 52 10	62 18 34	341
ver; Main Point	41 2 0	62 45 29	341
Hill; summit	40 48 0	65 10 29	342
ff; S.W. cliff	41 9 0	63 55 49	342
Head; East summit..............	41 11 0	63 7 49	342
nio Sierra; summit	41 41 10	65 12 29	343
nt	42 3 0	63 48 0	343
José, Pt. S. Quiroga..............	42 14 15	64 27 29	343
es; entrance	42 30 25	63 35 39	343
oint; East cliff.....................	42 38 30	63 34 29	343
Point; S.E. cliff	42 46 15	63 36 49	343
k	42 49 0	63 44 9	343
lf, Point Ninfas	42 58 0	64 19 49	343
iver; entrance	43 20 45	65 3 9	344
oint....................................	44 7 0	65 14 49	344
na Port; Spanish Observatory...	44 30 40	65 21 59	344
na Port; S.W. cove, Beagle's itory	44 32 15	65 22 49	344
; Sugar-loaf Island near.........	45 4 10	65 48 0	315
spina; South point	45 10 10	66 32 9	345
tazabal; S.E. pitch	45 12 45	66 31 29	345
edge	45 43 10	67 17 39	...
l; Point Marques..................	45 57 0	67 34 39	315
ead; summit	46 41 20	67 10 49	345
ee Points; N.E. pitch	47 6 20	65 51 19	315
sco; N.E. summit	47 12 20	65 43 49	315
re; East Islet	47 44 40	65 49 39	346
re; Ruins	47 45 0	65 55 34	346
sle; Mount at North end	47 54 45	65 45 29	347

	Latitude.	Longitude.	Pages.
COAST from the RIVER PLATA, cont.	° ′ ″	° ′ ″	
Sea Bear Bay; Beach on South side......	47 56 49 S.	65 47 49 W.	347
Shag Rock..	48 8 25	65 56 45	348
Watchman's Cape; Monte Video	48 18 55	66 21 49	348
Bellaco or St. Estevan's Rock	48 30 50	66 13 14	348
Port St. Julian; Cape Curioso...............	49 11 10	67 38 19	348
———— ———; Shag Island	49 16 0	67 41 51	348
Cape Francisco de Paulo; extremity	49 41 18	67 37 19	...
Santa Cruz; Mount at the entrance	50 8 30	68 23 0	349
Broken Cliff Peak; the brink	50 14 30	68 35 4	349
Lion Mount; the summit.....................	50 20 0	68 53 19	350
Observation Mount; summit	50 32 35	69 3 29	350
Coy Inlet; Height on South side of entrance	50 58 27	69 9 6	351
Cape Sanches; extremity......................	51 6 56	69 7 19	...
Tiger Mount; summit	51 21 36	69 7 18	...
Cape Fairweather; extremity	51 32 5	68 59 4	350
Gallegos River; Observatory mound	51 33 21	69 0 31	351
———— ———; North Hill	51 49 56	69 28 19	351
Friars; Northern and smallest...............	51 49 12	69 13 49	351
Friars; Southern and largest	51 50 8	69 12 39	351
Convents; Northern..............................	51 52 9	69 22 19	351
————; Southern............................	51 53 1	69 20 39	351
The Virgin's Cape; S.E. extremity......	52 18 35	68 21 25	352
Dungeness; extremity	52 22 40	68 25 29	352
Mount Dinero; summit	52 18 25	68 33 39	352
Cape Possession; centre	52 16 35	68 57 14	352
Cape Orange; Peak.............................	52 28 10	69 29 44	...
Queen Catharine Point.........................	52 32 0	68 44 25	355
Cape Peñas	53 51 30	67 33 35	...
Cape St. Ines......................................	54 8 0	67 9 5	355
Cape St. Diego; extremity	54 40 35	65 5 53	355
STATEN ISLAND, &c. ....[28]			
Middle Cape; the Rocks.......................	54 48 20	64 45 35	356
Cape South; extremity.........................	54 51 0	64 45 55	356
Cape St. Bartholomew; middle point......	54 53 45	64 45 45	356
Cape Colnett; the Islet	54 42 15	64 18 45	356
Port Cook; Observatory mark, summit ...	54 45 16	64 3 0	357
————; head of the Port, on the S.W.	54 46 25	64 3 0	357
Cape St. John; Eastern extremity	54 42 50	63 43 25	357
Hole in the Wall; on the South side......	54 49 20	63 55 40	357
Good Success Bay; North head	54 47 0	65 11 45	354
Spanish Harbour; Point Kinnaird	54 57 5	65 46 54	...
Barneveldt Isles; centre	55 48 54	66 43 48	358
Evout's Island; centre	55 33 0	66 44 3	358
Lennox Harbour; point at North end of Beach..	55 17 4	66 48 3	...
CAPE HORN; South summit ......[29]	55 58 41	67 16 15	358
St. Martin's Cove; head of it	55 51 19	67 33 3	359
Orange Bay; middle of it	55 30 50	68 4 23	...
Isles of Diego Ramirez:			
South or Boat Isle; summit	56 26 35	68 40 20	359
Northernmost Rock	56 22 25	68 40 45	359
Isles of St. Ildefonso; Southern Rock......	55 53 30	69 17 15	360
————————; highest summit ...	55 52 30	69 18 45	360
Port Famine, in the Strait of Magalhaen [30]		70 58 0	xxxvii

	Latitude.	Longitude.	Pages.
AST and ISLANDS of AFRICA, the RIVER GALLINAS to CAPE z, or LOPO GONÇALVES ......[32]			
allinas; entrance....................	7° 0′ 1″ S.	11° 38′ 5″ W.	372
ount (1,046 feet); Western beach	6 43 0	11 21 9	372
IESURADO; extremity...............	6 19 15	10 49 0	374
————; the Cape trees	6 17 29	10 49 25	374
's River; entrance	6 22 0	10 37 0	375
ia; Government house...............	6 19 1	10 48 5	375
Directors' house	5 54 50	10 4 5	376
estros or Grand Cestos; S. entrance	5 26 25	9 34 45	377
Point	5 9 10	9 17 30	378
ara, or Barbarra Factory	4 59 15	9 2 5	378
Neefoo, or Niffou	4 45 3	8 32 2	379
'ALMAS; flagstaff........................	4 22 9	7 44 16	380
....	4 24 47	7 21 30	381
Bereby	4 39 3	6 54 30	382
rew's River, King George's Town, n Swarton Corner	4 57 8	6 3 47	382
Fresco, or Rio de Lagos; off the h...	5 1 8	5 32 5	382
Lahou..	5 8 3	4 57 40	382
iques	5 11 8	4 26 8	382
River; Anchorage S.E. of the mouth	5 3 5	3 12 7	383
ia	4 58 45	2 35 5	388
Anthony	4 52 18	2 14 45	388
Three Points	4 44 30	2 5 45	388
ah	4 45 27	2 2 8	389
e	4 47 45	1 56 40	389
, or St. George del Mina	5 5 0	1 22 30	390
COAST CASTLE; *Flagstaff and Time*	5 5 25	1 13 51	391—393
e, or Moree; flagstaff ....[33]	5 7 30	1 9 0	393
boe; flagstaff..............................	5 10 12	1 7 12	393
ntine; flagstaff	5 10 30	1 5 56	393
nquerry; flagstaff	5 13 30	0 46 48	394
Hill; summit	5 18 36	0 39 0	394
oe; point....................................	5 29 0	0 24 0	394
; British flagstaff	5 31 53	0 11 30	394
; fort	5 45 0	0 1 48 E.	396
River; entrance	5 46 0	0 41 0	396
t. Paul	5 43 30	0 52 18	397
; flagstaff	5 54 48	0 55 5	399
a; town	5 57 42	0 57 18	399
Popoe; road	6 13 0	1 36 0	400
Popoe; road	6 16 0	1 46 0	400
h, or Ajuda	6 19 0	2 5 0	400
....	6 22 0	2 25 0	401
Novo; hill	6 20 0	2 34 0	401
——; road	6 19 0	2 34 0	401
y; shore hut	6 24 10	2 53 25	401
—; road......................................	6 20 0	2 57 48	402
River; entrance...........................	6 26 0	3 26 10	402
River; N.W. point ....[34]	5 46 0	5 4 0	404—408
s Esclavos	5 34 0	5 5 48	408
Formosa; West point	4 28 0 N.	5 41 39	409
———; Eastern point	4 19 24	5 54 33	409
Nun, or Quorra, or Niger; the ....*[35]*	4 16 0	5 56 0	409—412
nto, *or Second River*	4 17 0	6 15 0	416

COAST and ISLANDS of AFRICA, CONTINUED:—	Latitude.	Longitude.	Pages.
	° ′ ″	° ′ ″	
Rio St. Nicholas, or Third River	4 18 0 N.	6 24 0 E.	416
New Calabar River; Foche Point	4 22 40	7 0 0	417
Bonny River; Rough Corner	4 23 40	7 7 0	418—423
Old Calabar River; Tom Shot's Point, West of the entrance	4 36 0	8 19 0	424—429
Backasey Gap; East of the entrance	4 29 0	8 32 0	424
Bimbia Isle	3 57 0	9 13 48	431
Cape Camaroens	3 53 0	9 0 0	430
Camaroens Mountain; peak	4 13 0	9 12 0	430
Rumby Mountains; highest peak	4 57 0	9 18 0	430
Qua Mountain	5 15 0	8 51 0	431
Corisco Island; N.W. point	0 55 54	9 19 45	439
Cape Esterias	0 37 48	9 21 0	439
Point Clara	0 30 30	9 20 30	440
Cape St. John	1 9 40	9 21 35	439
Gaboon River; Round Corner	0 18 5	9 20 0	440
Cape Lopez, or Lopo Gonçalves	0 36 12 S.	8 45 17	443
AFRICAN ISLANDS.			
Fernando Po			
Clarence Peak	3 35 0 N.	8 46 30	449
Cape Bullen; Northern extremity	3 47 25	8 43 24	448
Adelaide Islet	3 34 48	8 47 17	448
Point William; flagstaff	3 45 20	8 47 38	449
Cape Horatio; N.E. extremity	3 46 15	8 54 24	451
Cape Vidal; E. extremity	3 39 18	8 56 18	451
Cape Barrow; South Rock	3 11 30	8 40 0	451
Cape Eden; S.W. extremity	3 15 30	8 25 6	450
Cape Badgley; W. extremity	3 19 42	8 24 42	451
Charles' Folly (Pta. S. Carlos), N.W. extremity	3 28 50	8 29 58	451
Goat Isle (Is. das Cabras); centre	3 32 50	8 34 36	451
Ilha do Principe, or Prince's Island:			
Ilheo do Diamante	1 40 42	7 27 54	454
Ponta do Capitaõ	1 40 0	7 32 48	454
Santo Antonio Bay; Fort Sta. Anna	1 39 30	7 26 30	454
Ponta Pedrinha	1 38 20	7 21 47	456
Pedras Tinhosas, or the Brothers; S. one	1 21 10	7 17 30	456
San Thome', or St. Thomas Island			
Ponta do Figo	0 30 0	6 31 48	458
Cabras Island	0 24 10	6 41 31	458
Anna de Chaves Bay; Fort S. Sebastiaõ	0 20 30	6 42 38	461
Ponta da Balea	0 0 45	6 29 42	462
Ponta Furada	0 13 50	6 25 49	462
Ilheo das Rolas	0 0 30 S.	6 30 0	462
Anno Bona			
Ilheo da Tartaruga, or Turtle Island	1 24 28	5 38 10	465
Point Esteves	1 24 18	5 35 45	465
South Point; Rock off	1 28 35	5 36 45	465
VI.—The COAST of AFRICA, from Cape Lopez, or Lopo Gonçalves, to the Cape of Good Hope, &c.			
Cape Lopez, or Lopo Gonçalves; N. *extremity*	0 36 12	8 43 0	468

T OF AFRICA, CONTINUED:—

	Latitude.			Longitude.			Pages.
	°	′	″	°	′	″	
Mexias; North point of entrance ...	0	53	0 S.	7	47	0 E.	468
Fernan Vas	1	15	0	8	54	26	468
Santa Catharina	1	52	0	9	11	25	468
Sette..	2	22	30	9	30	36	468
'edras	2	42	0	9	48	40	469
Yumba	3	15	0	10	32	36	469, 470
Matooti	3	22	30	10	37	28	470
outh of Point Matooti	3	30	0	10	43	25	470
Banda	3	55	30	8	57	56	471
Kilongo	4	16	30	11	18	56	472
Point	4	40	0	11	44	36	473
Point	4	49	0	11	47	56	474
Malemba	5	18	30	12	6	50	475
ıda Bay; Point Palmas, or enda Hook	5	32	0	12	7	50	477
'oint	5	44	0	12	4	36	479
River; Shark Point	6	4	36	12	5	0	484
——; Cape Padraõ	6	8	0	12	10	56	484
al Grande Wood	6	39	0	12	30	56	490
Bay; North Point....................	6	56	30	12	46	26	491
or Couza River	7	12	0	12	50	20	491
izette factories	7	18	0	12	50	50	492
Mountains..................................	7	36	40	13	3	36	493
izeite Point	7	41	0	13	0	20	493
izette Villages	7	44	0	13	3	30	493
iz Bay; Strong Tide Corner	7	47	0	13	6	25	494
la Bay; Mouth of the Onzo River...	8	14	0	13	14	50	495
Dandé	8	28	0	13	17	30	496
Spilimberta	8	36	0	13	19	30	496
Lagostas	8	45	6	13	15	18	497
la Island; North Point	8	46	12	13	13	55	497
aulo de Loanda; Town Flagstaff [36]	8	48	6	13	12	27	498
Palmarinhas	9	7	10	13	1	20	499
a River; Molli, or North Point......	9	20	0	13	10	20	499
Rocky Point	9	37	0	13	10	20	500
Ledo; extreme..............................	9	46	0	13	15	50	500
San Blas, or St. Blaize; extreme ...	10	1	30	13	21	50	500
ongo; North Point.........................	10	19	30	13	34	50	501
enguela Head	10	47	30	13	44	50	501
ubo	10	55	0	13	54	20	501
Redondo; the Fort	11	12	0	13	54	10	501
mbo Point	11	18	15	13	51	36	501
e's Head	11	35	0	13	49	30	502
apado, or Egito	11	51	0	13	48	0	502
ogito	11	58	30	13	48	56	502
Point	11	20	0	13	44	30	503
ilip de Benguela; Fort Flagstaff [37]	12	33	55	13	23	42	504
ilip's Bonnet	12	34	24	13	17	50	504
San José	12	35	0	13	12	30	505
s Point; extremity.......................	12	49	0	12	54	30	505
o or Luash Harbour	12	59	30	12	59	0	506
a or Equimeua Bay	13	12	0	12	53	0	506
ant Bay; S.W. point	13	14	0	12	48	40	506
s Frades, or Friars' Point	13	14	0	12	48	50	507
St. Mary, or Sta. Maria	13	26	0	12	34	50	507
St. Martha	13	52	0	12	29	0	508
atilhas Bay.................................	14	4	0	12	24	20	508
Bay	14	13	0	12	22	50	508

	Latitude.	Longitude.	Pages.
COAST OF AFRICA, continued:—			
	° ′ ″	° ′ ″	
Mount do Velho	14 25 0 S.	12 23 0 E.	508
Point Sta. Gertruda	14 49 30	12 13 50	508
Mossamedes Bay; Point Euspa	15 7 30	12 9 20	508
Cape Negro; pillar	15 40 42	11 58 50	509
Port Alexander; Sandy Point	15 49 0	11 53 0	510
Point Albina	15 52 0	11 47 0	511
Great Fish Bay; Tiger's Point	16 30 0	11 46 10	511
River Nourse; entrance	17 15 0	11 51 0	511
Cape Frio; extreme	18 24 0	12 2 20	512
Bay of San Ambrosio; North Point	20 16 0	13 7 0	512
Cape Cross, or Sierra	21 48 0	13 56 50	512
Rocky or Da Serra Bay; North point	22 9 0	14 6 50	512
Walvisch Bay; Pelican Point	22 52 30	14 27 10	513
Sandwich Harbour, or Porto d'Ilheo	23 30 0	14 6 30	515
B. de la Conceiçao	24 0 0	14 31 0	...
Hollam's Bird Islet	24 38 0	14 32 20	515
Spencer Bay; Mercury Island	25 42 0	15 0 0	516
Hottentot Bay; North point	26 7 0	14 56 0	516
Ichaboe Island	26 19 0	15 0 0	516
Marshall Rocks	26 24 0	14 57 0	...
Angra Pequena; Diaz, or Pedestal Point	26 38 24	15 7 25	519
Ilheo Secco	26 48 0	15 7 0	519
Ludovic Island	26 50 0	15 11 0	520
Bol Islet	26 59 0	15 14 0	520
Possession Island; South point	26 57 0	15 12 39	520
Boyd's Island	27 0 0	15 13 0	521
Whale Bay	27 22 30	15 21 0	521
Angras Juntas	27 47 0	15 40 0	521
Orange, or Gariep River; Dry bar	28 38 0	16 27 40	522
Cape Voltas	28 44 0	16 31 40	523
Koussie River	29 54 0	17 11 0	524
Cape Donkin	31 54 12	18 14 12	524
—— Deseada	32 18 24	18 24 30	524
St. Helena Bay; Paternoster Point	32 42 12	17 54 3	524
Castle Cape	32 46 48	17 50 18	525
SALDANHA BAY; North point of entrance	33 1 48	17 4 18	525
Point Eyser, or Isser	33 22 18	18 10 0	526
Dassen or Coney Island; the centre	33 26 12	18 5 30	526
Bock Point	33 33 48	18 20 0	...
TABLE BAY; Robben Island, Station	33 47 48	18 22 20	527
———; ASTRONOMIC OBSERVATORY, and *Time Ball*	33 56 3	18 28 45	528, 532
———; Castle Flagstaff	33 55 12	18 25 53	528
———; Green Point, *Lighthouse* on	33 53 12	18 24 9	531, 535
———; Devil's Berg; the peak	33 57 12	18 26 39	529
CAPE of GOOD HOPE; extremity	34 22 0	18 29 10	527—538
———; Bellows Rock	34 23 48	18 29 50	538
FALSE BAY; Simon's Bay dock-yard	34 11 18	18 26 0	538—545
———; Trident Rock	34 16 30	18 34 45	538
———; Southern Seal Island	34 8 36	18 35 25	542
———; Seal Island Shoals	34 9 42	18 36 10	542
———; Anvil Rock	34 22 42	18 31 30	538
Hang Klip, or False Cape; extremity	34 23 48	18 50 20	545
Point Mudge; extremity	34 27 12	19 10 30	545
Point Danger; extremity	34 41 24	19 22 0	545
Dyer's Island; centre	34 43 42	19 27 0	545
Quoin Point; extremity	34 48 48	19 40 0	546
Cape Agulhas, or Lagullas; Lighthouse	34 49 46	20 0 40	546
Struy's Point; extremity	34 42 24	20 16 0	548

ST OF AFRICA, CONTINUED :—	Latitude.			Longitude.			Pages.
	°	′	″	°	′	″	
ıfanta; extremity	34	30	48 S.	20	53	0 E.	551
accas, or Vaches	34	19	42	21	56	24	551
Point; extremity	34	27	18	21	28	54	...
oint; extremity	34	15	0	22	3	0	551
Blas	34	6	54	22	10	36	551
River; entrance, East point	34	6	30	23	9	40	552
elgado, or Seal Cape; extremity	34	4	48	23	23	30	552
Francis	34	10	0	24	52	40	553
ecife; Lighthouse	34	1	0	25	40	0	554
BAY; Commandant's House	33	57	30	25	38	32	555
——; Peak of St. Croix Island	33	47	36	25	45	30	557
——; Roman, or Dispatch Rock; on	33	58	24	25	43	42	554
——; Bird Island Lighthouse	33	52	6	26	16	48	556
——; Western ditto	33	51	48	26	9	42	556
——; Western Reef, off the same	33	53	24	26	9	12	556
Cape; extremity	33	46	30	26	13	0	559
Point; extremity	33	46	30	26	24	30	560

NOTES

REFERRED TO IN THE PRECEDING TABLE; SHOWING THE AUTHORITIES, WITH SOME ADDITIONAL REMARKS, INCLUDING THE VARIATIONS OF THE COMPASS.

1. **Volcanic Region.**—On pages 84—89 are given the particulars of the *submarine* volcanoes. and their effects, that have been met with in this part of the Atlantic Ocean, as far as we have been able to collect them. They are given there nearly in the order of their occurrence. They probably present no danger to the navigation; but similar phenomena may be met with in the neighbourhood. Some of them, it will be seen, lie beyond the limits that we have mentioned: should the notices be correct, it will extend the space beyond the Equator and lat. 1° or 2° S. between the eighteenth and twenty-second meridian, the limits we have assigned to it in the ensuing pages, within which the greatest portion of them have occurred. It may be that the shocks have been felt at considerable distances from their centres, and therefore the positions given in the Table cannot be said, in those cases, to give the situation of the volcano itself. In the Table their positions are given, commencing from the westward.

2. **Trinidad** and **Martin Vaz.**—This Isle and the Islets of Martin Vaz were surveyed in October, 1822, by *M. Berard*, an officer of *La Coquille*, commanded by Captain Duperrey, who gives the larger islet of Martin Vaz in lat. 20° 27′ 40″, lon. 28° 52′ 38″; consequently a little to the North and East of the position given in the Table. M. Berard places the S.E. point of Trinidad in lat. 20° 29′ 55″, lon. 29° 20′. Hence the *true* bearing and distance between the two is W. 4° S. 26 miles. The variation of the compass was found to be 7° 46′ 38″, and the magnetic bearing is, therefore, W. ½ N. There is a *Sunken Rock* at nearly a mile S.W. from the Martin Vaz Rocks.

3. **St. Helena.**—The position of St. Helena has been finally settled, by means of an Observatory, in lon. 5° 42′ 30″ W., which was, as shown in page 112, established by the East India Company, but is now disused.

4. **Telemaque Rock.**—The route of Captain Hanmer, in H.M.S. the *Heron*, noticed in page 117, is exhibited in Captain Owen's Chart of Southern Africa. For the sentiment expressed as to the *eastward*, read *half a degree westward*, in which situation, if it existed, it could not, according to the route, have been seen. Here, however, it is to be observed that, on a near approach to the spots assigned to this shoal, Captain Hanmer found no bottom at 160, 165, 170 fathoms.

The question of the existence of this rock, however, has been recently brought up by the discovery stated to have been made by the ship *Marion*, on her voyage from Greenock to Bombay, on a fine clear morning, January 17th, 1853. "It is reported by the *Marion* as an oblong reef, on which the sea was continually breaking, and which to about 200 yards from it, was surrounded by discoloured water, beyond which the usual colour of the deep sea water appeared. From unexpectedly seeing the bank under sail, the *Marion* did not stop to sound, but passed the southern end about 80 yards distant. Position correctly determined as 37° 26′ S., lon. 26° 55′ E."

5. **Isla Grande.**—The various conjectures as to the position, and even the existence, of this Island, will be found to be fully stated hereafter, in pages 130 to 135.

6. **Falkland Islands.**—The positions of these Islands are those given by Captain

FitzRoy, who spared neither pains nor *expense* in exploring them. Their longitudes depend upon that of the flagstaff at the Government House at Port Louis (Anson), which was found to be, by repeated chronometric measurements, 12° 50′ 30″ East of Port Famine (70° 58′ 0″), the fundamental point of Captain King's operations, but which, from a different assumption of the longitude of Rio Janeiro, he places 3′ 52″ *eastward* of the position assigned to it in the Table.—(See note 24.)

The given longitudes of the Falkland Islands have heretofore been considered as an approximation only. The observations of the Spanish officers, in the *Descubierta* and *Atrevida*, 1793-4, assigned to Port Egmont lat. 51° 21′ 3″, lon. 60° 6′; the latter, by chronometric difference from Cape Horn, assuming that Cape as in 67° 21′, instead of 67° 16′, the longitude shown in the Table. The true difference would, therefore, give 60° 10′. Lieutenant Edgar, on his survey of the Western Island, in 1786-7, allowed only 59° 42′, as the longitude of Port Egmont. This is much too far East.

The officers of the *Descubierta* made *Port Louis*, at the N.W. extremity of Berkeley Sound, 51° 34′ S., and 58° 5′ W. This, corrected by the true longitude of Cape Horn, will be 57° 51′.

Mr. Weddell, with very inferior means, but careful and repeated observations, made the longitudes of Port Louis, 58° 3′ 30″; Ship Harbour, New Island, 61° 9′; and West Point Harbour, 60° 36′ 30″. Here we embrace the opportunity of noticing that, in 1825, appeared Mr. Weddell's account of "A Voyage toward the South Pole, performed in the years 1822—24; containing an Examination of the Antarctic Sea, to the 74th degree of latitude, and a Visit to Tierra del Fuego, &c.;" a volume, as will be seen in the Directory, which has imparted valuable information on the several coasts which he visited. Mr. Weddell proceeded from London on a sealing voyage, in the *Jane*, of 160 tons, accompanied by the cutter *Beaufoy*, of 65 tons, which commenced 17th of September, 1822, and ended in 1824, after an absence from England of nearly two years; and it is to be remarked, that he proceeded to a higher southern latitude than any previous navigator; for on the 20th of February, 1823, he reached lat. 74° 15′, in lon. 33° 20′ W., where the sea was clear, many whales in sight, and *birds innumerable*.

7. BEAUCHENE ISLAND.—In Captain FitzRoy's Tables the position of this Island appears to be given erroneously, it being there stated as in 52° 41′, and lon. 59° 5′ (the South extreme), or 10′ 30″ North, and 5′ West of the place assigned to it on the Admiralty Chart, which is that given in the Table; and which, from the bearings given from fixed points in the Survey, we presume is correct.

8. SOUTH GEORGIA.—Adventure Bay, near the N.W. end of Georgia, and South of Cape North, is given as described by Captain Weddell, page 163. The other points are given from Captain Cook's Second Voyage, January, 1775. *Wasp's Harbour* is stated by Captain Morrell, as shown in page 164, to lie in 38° 25′, but this cannot be; it lies nearer to 36° 25′, and this, we presume, is the longitude intended to have been expressed.

9. SANDWICH LANDS.—The Candlemas Isles, Cape Montague, and Southern Thulé are given in the Table from Captain Cook's Second Voyage, January and February, 1775; but it will be seen that Captain Morrell (page 166) gives the Candlemas Isles in the same latitude, and lon. 26° 59′ W. This seems to confirm the authority of Captain Cook; but Captain Biscoe states that the longitudes are about 50′ to the West; which, we are apprehensive, requires confirmation.

10. SOUTH SHETLANDS.—The positions of these Islands are generally unsatisfactory, with the exception, perhaps, of Deception Island, the station of Captain Foster's pendulum experiments. A late chart, published by the Hydrographic Office, exhibits them much to the *eastward*, in some cases nearly to the amount of 2°. In these high latitudes it is, without doubt, a difficult task to fix meridional distances, or absolute positions, with that degree of accuracy that can be attained in lower latitudes and less rigorous climates. In the absence of more certain authorities, we have repeated the positions as given in the former edition.

11. GENERAL NOTE on BRASIL, &c.—Since our first publication on the navigation described in the following pages, which necessarily developed many inaccuracies in the charts, &c., two very important expeditions have been made, which have served, in an extraordinary degree, to *correct previous* defects. The results of both, in charts and

descriptions, have been given to the public; and both in a style of elegance which does great honour to their respective authors.

The first of these, under the orders of the **French Government**, was directed by **Captain** (now **Baron**) **Roussin**, and executed in the years 1819 and 1820. It has been the means of reforming the hydrography of all the **Coast of Brasil**, between **Maranham** and the Island of **St. Catharine**, an extent of nearly 800 leagues.

The second, a still more arduous task, has been executed under the orders of the **British Admiralty**, by **Captain Wm. Fitzwilliam Owen**, and his scientific assistants, in and between the years 1820 and 1826; by this we have gained a general survey and rectification of all the **Western Coast** of **Africa**, from the **River** of **Benin** to the **Cape** of **Good Hope**, together with the southern and eastern coasts, even to the **Red Sea**.

These have been succeeded by the important surveys of **Captain Phillip Parker King**, and **Captain Robert FitzRoy**, on the American side, which have rectified innumerable points that could not otherwise have been decided; and the particulars of which will be explained in the Notes hereafter.

NORTHERN BRASIL.—The Table of the Positions of Places between Cape St. Roque and Maranham [Maranhao] is almost wholly from that of M. **le Baron Roussin**, Commander of the Hydrographic Expedition made by order of the French Government; and it is gratifying to find that the results, generally, are so accordant with those previously gained by Captain Hewett in 1814.

As the longitudes were originally given from the meridian of Paris, it may be proper to notice that they have been reduced to that of Greenwich, by deducting 2° 20′ 22″, the difference between the two meridians, as recently settled by the principal astronomers of France and England.

For the position of Point Macoripe, and other points, observations were made by Captain Hewett, when a lieutenant in H.M. frigate *Inconstant*, and the results were first published by this gentleman in 1817. The latitudes were derived from meridional observations made on the spot, and the longitudes by two excellent chronometers from Rio Janeiro. The officers of the *Rhin* frigate, in 1813, from lunar observations, placed Maranham 15′ West of the longitude assigned by Captain Hewett; but others have placed it considerably to the eastward of the same.

Until the appearance of Captain Hewett's chart, there was not one chart of the North Coast of Brasil that could, in any degree, be relied on. As to longitude, a chart published in London, as a *new one*, in 1808, represented Maranham *nearly* 2° *too far to the West;* a most dangerous error, considering the nature of the coast, in the months of August, September, October, and November deemed inaccessible, from the thick haze which hangs over the land at that season of the year.

The points given by Captain Hewett are as follow:—

		°	′	″			°	′	″	
Point Macoripe, near Ciara, or Seara	*Lat.*	3	40	30	S.	*Lon.*	38	27	0	W.
St. Anna's Island		2	18	0	—		43	43	0	—
Mount Itacolomi (*the mark for Maranham*)		2	8	0	—		44	24	0	—
Middle Bank, Maranham; North end ..		2	17	0	—		44	10	30	—
St. Marcos Point, Maranham		2	28	0	—		44	15	0	—

12. **Point Macoripe.**—In 1830, Captain George Cheveley, of Liverpool, a scientific observer, made the latitude of the inner anchorage off Seara 3° 43′, and Point Macoripe 3° 40′, with longitude some minutes eastward of that in the Table: but Captain the Hon. William Wellesley, in H.M.S. *Sapphire*, at anchor in 5½ fathoms, with the flagstaff on the fort S. 34° W., made the latitude of the Point 3° 83′ only, and its longitude 38° 30′, confirming that given in the Table.

13. **Ceara.**—Roussin places Ceara 3° 42′ 8″ East of Pernambuco; Lartigue makes the difference 3° 39′ 58″; mean of the two, 3° 41′ 3″; this makes the longitude of Ceara 38° 32′ 56″. M. Lartigue makes Ciara 5° 47′ 11″ East of Maranham, or 38° 31′ 9″; but as Pernambuco is the best determined, we have given the first result.

14. **Curu.**—The village of *Curu* was visited and described by the Hon. Captain Welesley, as shown hereafter. Its position is given by Captain W. as 3° 28′ S., and 39° W.; ut according to the Baron Roussin's chart it stands in 3° 30′, and 38° 53′.

15. **Tutoya, or Tutoia.**—The entrance to the Port of *Tutoya* is given in the Table as represented by the Baron Roussin; but we are inclined to think that this must be the entrance of a small river, the *Jaca*, about 7 leagues more to the westward. In the charts generally, that of the Baron Roussin not excepted, this portion of the coast has been very inaccurately represented. See the description hereafter.

16. **St. Anna's Lighthouse.**—Captain Wellesley gives the Lighthouse on St. Anna's Island as in lat. 2° 15′ 10″, and 43° 40′ 18″, observing that it is not on the northernmost point of the Island, and that the effulgence of the light is brightest once in every forty seconds; but this will be found described with the sailing directions.

Fort St. Antonio, near Maranham, was given by the same gentleman as in 2° 29′ S., and 44° 20′ W.

17. **Maranham.**—Captain Sabine's position of the Cathedral of Maranham, as quoted by Commodore Owen, is lat. 2° 31′ 42″, lon. 44° 18′ 30″; but the longitude originally given, from Captain Sabine's observations, in his own volume, is 44° 21′ 28″. With the reason of this difference we are not acquainted. The observations were made at the house of the British Consul, adjoining the Cathedral; so that the longitude may be referred to that structure, without sensible error. The longitude was the result of 158 lunar distances (16 sets) taken in the months of August and September, 1822, in conjunction with several chronometric differences, &c. The Baron Roussin places it in 44° 16′ 2″, reckoning from Anhatomirim, upon which all his longitudes depend (*Pilote du Brésil*, page 13); but as we have placed Anhatomirim 6′ 54″ *eastward* of his position, this will only give 44° 9′ 8″. Although this determination accords with the observations of Sir E. Home (44° 9′ 7″), still in measuring westward great discrepancies will be found, which may be obviated by referring to other observations.

Captain Hewett, as above, places St. Marcos Point (6′ East of the Cathedral) in 44° 15′: but as his longitude of Rat Island, Rio Janeiro, is 3′ 15″ East of our position, it will make it 44° 18′ 15″ (Cathedral, 44° 18′ 21″), precisely the result obtained by Captain Foster by his run from Fernando Noronha, July, 1831: and as this will also nearly coincide with the measurement from Pará, we have given this longitude in the Table.

18. **VARIATIONS OF THE COMPASS.**—The variation, as lately ascertained near St. Roque, is 4° 55′ W.; at the Urcas, 3° 50′ W.; Point do Mel, 3° 36′ W.; at Aracati and Ciara, 3° W.; at Jericoácoará, 2° W.; at the Rio Iguarassu, 1° 16′ W.; at the Lançoes Grandes, *no variation;* at St. Anna's Isle, 1° 50′ *East;* at Maranham, 1° 37′ E.; St. John's Island, 1° 30′ E.; at Pará, 2° East.

EASTERN COAST OF BRASIL, ETC.

19. **Cape St. Roque to Cape Frio.**—The latitudes of places on the Eastern coast of Brasil, from Cape St. Roque to Bahia, are generally those of the Baron Roussin; and there is, in general, a tolerable agreement as to longitude.

20. **Pernambuco.**—The position of this place does not seem open to dispute; on page 234 is given the determinations that have been made; and to connect it with other places, we have taken Captain FitzRoy's observations. The difference of longitude obtained by Captain FitzRoy, between Fort St. Pedro, Bahia, and Fort Picaõ, is 3° 39′ 15″; which makes the latter in 34° 51′ 48″, which varies only 5″ from the position given from Admiral Roussin, and 7″ from Captain Hewett's determination.

21. **Bahia.**—The Lighthouse on Fort San Antonio is 42″ W. of Fort San Pedro, to the N.W. of it, and to which place Captain FitzRoy has referred his measurements. By several runs between Rio and this place, he has made the difference of longitude between them, as 4° 37′ 51″, 4° 37° 54″, 4° 37′ 51″, and 4° 37′ 52.5″. The mean of these is 4° 37′ 52″, which, applied to the longitude of Vilganhon Island, and the different longitude between Fort San Pedro and the Lighthouse, will place the latter in 38° 31′ 45″, as in the Table.

22. **Abrolhos.**—The difference of longitude between Sta. Barbara and Rio Janeiro, according to Admiral Roussin, is 4° 32′ 22″, while Captain FitzRoy, with 22 chronometers, by repeated measurement, makes it 4° 27′ 15″. As Captain FitzRoy's attention was

particularly directed to this difference, we take his measurement, which will place this in longitude 38° 41′ 40″, as in the Table.

23. Cape Frio.—The Baron Roussin gives the position of the South point of the Cape as in lat. 23° 1′ 18″, lon. 42° 3′ 12″; but Lieutenant H. Kellett, who surveyed the harbour in 1831, has given the summit of the Island in lat. 22° 59′ 54″, lon. 1° 9′ 6″ East of Rio. This gives for the longitude 41° 49′ 59″ from Greenwich, from the reasons given in the next Note, on Rio Janeiro. Sir Thomas Brisbane and Mr. Rumker, in 1821, obtained the Cape Point as 41° 57′ W. In 1824, Captain Livingston made the latitude of the Saddle Gap, on the middle of the Island, by a good meridian altitude, 23° 1′ 2″ S. Captain Foster makes it 1° 10′ 45″ East of Vilganhon Island, which will give for its position 41° 58′ 10″, as in the Table.

The Lighthouse on the Island, with *revolving* light, is noticed in page 273: but this light, at about 1,500 feet above the level of the sea, is said to be, three-fourths of its time, invisible among the clouds. A more useful light may, perhaps, at a future time, be established near its extremity.—See *Nautical Magazine*, August, 1837, p. 540.

24. Rio Janeiro, &c.—In 1832 were published, under the authority of the Lords of the Admiralty, "Sailing Directions for the Coasts of Eastern and Western Patagonia, &c., including the Sea Coast of Tierra del Fuego; being the result of a voyage performed in His Majesty's Sloops *Adventure* and *Beagle*, between the years 1826 and 1830, under the direction of Captain Phillip Parker King, F.R.S., &c.;" and, in 1836, appeared in the Journal of the Royal Geographical Society, a "Sketch of the Surveying Voyages of His Majesty's Ships *Adventure* and *Beagle*, commanded by Captains P. P. King, P. Stokes, and Robert FitzRoy, R.N."

Captain King's first Observations on this expedition were given in the first volume of the same Journal, 1831, which detailed the operations of the two ships until their return to England, in 1830.

In the autumn of this year the *Beagle*, commanded by Captain FitzRoy, was again prepared for a continuation of the Survey, and every care and assistance was given for her equipment. At the end of 1831 she sailed from Plymouth; from which time, until 1835, she was surveying the coasts of South America, the Falkland and the Galapagos Islands. Traversing the Pacific Ocean by the way of Taheite and New Zealand, she proceeded to visit Sydney, Hobart Town, King George's Sound, the Keeling Islands, the Mauritius, the Cape of Good Hope, St. Helena, Ascension, Bahia, Pernambuco, the Cape Verde Islands, and the Azores. Meridian distances, the principal object, were carefully measured during the whole voyage. Observations for latitude, and the variation and dip of the needle, for the intensity of the magnetic influence, and upon tides, were made at each principal port. *This connected chain of good meridian distances is the first that has been carried around the world.* From 14 to 22 chronometers were employed, and the results are highly interesting. "On this expedition no life was lost, nor any serious injury sustained by any individual. Not a spar was sprung, except studding sail booms, nor a sail split till worn too long, nor a single sheet of copper lost from the vessel's bottom. The *Beagle* was so well fitted out at Plymouth dockyard, and afterward so supplied by direction of the Admiralty, that neither want nor deficiency ever occurred. Some of the officers and men served more than ten years in this vessel, having shared all the disagreeables of the former voyage to Tierra del Fuego, from 1826 to 1830."

Captain King, in the Introduction to his Sailing Directions, has stated that "The eastern coast of Patagonia, the western part of the Strait of Magalhaen, the Gulf of Peñas, and other parts of the western coast, were surveyed by Captain Stokes, of the *Beagle*. Upon the death of that officer, Captain FitzRoy succeeded to the command, and discovered and examined the Otway and Skyring Waters, and surveyed the outer or sea coast of Tierra del Fuego,—from Cape Pillar, at the western entrance of the Strait of Magalhaen, to Cape St. Diego, on Strait Le Maire.

"The differences of meridians, between the various points of the survey, were fixed, in all practical cases, by triangulation; but where this mode could not be adopted, they were ascertained by chronometric observations; the zero point (0) being the place of the Observatory at Port Famine (lat. 53° 38′ 12″ S.) the longitude of which was fixed at 70° 54′ West of Greenwich.

"This determination was obtained principally by chronometers from Monte Video and Rio Janeiro, which agreed very closely with the mean result of a considerable number of lunar distances observed at Rio, Gorriti, Monte Video, San Carlos de Chiloe, and

Valparaiso; and severally referred to Port Famine by the chronometric chain. Assuming *Villegagnon* (Vilganhon) *Island* at Rio de Janeiro to be 43° 5′ 3″ West of Greenwich, which is the result obtained by us with 14 chronometers from Plymouth, the longitude of Rat Island at Monte Video will be 56° 9′ 30″; and of Port Famine, 70° 54′ 1″. The mean of the lunar observations above mentioned make the latter 70° 54′ 10″, whence the zero point of the survey has been fixed, as above stated, at 70° 54′. Should the longitude of the station at Rio Janeiro, at some future time, be more correctly determined, all the meridional differences of this Survey must be corrected by a quantity equal to the excess or defect of what it is here assumed to be."

Since the publication of Captain King's operations, the fine work of Captain FitzRoy, or rather the joint production of Captains King and FitzRoy, and Mr. Darwin, the naturalist to the latter expedition, has appeared, and from which we have derived much information embodied in the following pages.

In the Appendix to our work on the North Atlantic Ocean will be found the remarks of Captain FitzRoy upon his chronometric measurements; "forming a connected chain of meridian distances around the globe, the first that has ever been completed or even attempted by means of chronometers alone." It will be there seen, that this chain exceeds the entire circumference of the earth by about 33 seconds of time, equal to 8′ 15″ of longitude. How this excess may affect the position of Rio Janeiro, as given by Captain FitzRoy, we have not considered; and although the longitude we have taken is still greater than Captain FitzRoy's, we may here say, that it is not at all unlikely that it is more to the eastward, or nearer the position assigned to it by Captain King, or as given in the former edition of this work.

In estimating the longitude of Rio Janeiro, we have brought into the calculation most of the observations that have been made; many of which would seem to be perfectly satisfactory, and yet vary from each other to a very considerable extent; yet it would seem unjust to throw them out altogether from the computation; and we have therefore thought, that the best mode of procedure would be to give them entire, and, from their combined result, give the longitude. This result will coincide with that assumed by Lieutenant Raper in his valuable work, and also with that of Captain FitzRoy; the same conclusion being arrived at by different means. We shall now give the grounds upon which the longitude in the Table has been taken. The difference between them amounts to 12′ or 14′; Roussin placing it in 43° 15′, Heywood in 43° 2′, and the British officers in 1810, as 43° 0′ only.

Captain FitzRoy, with 22 chronometers, has given the longitude of Vilganhon Island as 43° 8′ 45″, and this result is probably very near the truth.

Lieutenant Raper has assumed the longitude of this place, from Captain Beechey's observations of moon-culminating stars at Anhatomirim, as 43° 8′ 50″ or 43° 9′, as a secondary meridian, which very nearly agrees with the determination of Captain FitzRoy as above.

Upon comparing the longitudes, as found by astronomical observations, or the *absolute* position, and those obtained by the chronometer, or the *relative* position, we shall find that they very nearly coincide with that given by Captain FitzRoy.

Now, the differences of longitude between the principal points on this coast seem to be tolerably well ascertained, and therefore it is not necessary, in fixing the position of Rio, to confine ourselves to those observations made there exclusively; we shall therefore first give the various longitudes as obtained by independent observation.

Captain Hewett made the longitude of Rat Island, from 11 sets of lunations (5 East and 6 West), 43° 6′ 23″. Rat Island is 43″ eastward of Vilganhon flagstaff, to which place we shall refer the measurements; this gives for the latter 43° 5′ 40″. Sir Thomas Brisbane's and Mr. Rumker's three results in August, 1821, were 43° 3′ 0″ (43° 2′ 17″), 43° 1′ 0″, (43° 0′ 17″,) and 43° 10′ 15″ (43° 9′ 32″). The Portuguese astronomer, Don B. S. Dorta, by an eclipse of the sun, 1784, Feb., made it 43° 16′ 43″. The same eclipse, as calculated by M. Wurm, 43° 11′ 25″. Captain King made Vilganhon Island, by lunars, in 43° 8′ 18″; and Captain Stokes, by the same means, 43° 9′. M. Wurm subsequently gave the longitude from three occultations as 43° 16′ 40″, and by the eclipse above mentioned, 43° 10′ 55″; and from Dorta's observations, 43° 15′ 10″. Admiral Roussin, from the mean of 892 lunar distances divided into 332 series, deduces the longitude of the Sugar Loaf to 43° 14′ 20″, or Vilganhon, 43° 14′ 50″. Captain Otto Von Kotzebue, in Nov., 1823, from repeated observations on land, made Botafogo in lon. 43° 7′ 32″ (*Vilganbon, 1′ 50″ East, or 43° 5′ 42″*); M. Simonov makes it 43° 7′ 17″; and

Lieutenant Wainwright makes it 43° 10' 39". Captain Beechey calculated it by moon-culminating stars as 43° 4' 41", and by 158 lunars as 43° 10' 41"; and an occultation calculated by Faskanoff gives it as 43° 14' 0".

Besides the longitudes that have been observed at Rio, there are others which may be brought into the calculation, and among these is that of *Fort Anhatomirim*, near the N.W. point of the Island of St. Catharina. Lieutenant Raper deduces his longitude of Rio from the observations of Captain Beechey, in 1836, for fixing the position of this place: they consisted of series of moon-culminating stars, 6 observations, 1st limb, from 3^h 14' 15" to 3^h 14' 29"; and 5 observations, 2nd limb, from 3^h 13' 36" to 3^h 14' 34". These observations, computed by Mr. Henderson, give 48° 33' 54", and another set gave 48° 34' 47". The difference of longitude between Anhatomirim and Vilganhon, the mean of several measurements, is 5° 25' 3" (see Note 26); this will give for the first computation, 43° 8' 51"; and for the second, 43° 9' 44", for the longitude of Vilganhon. The longitude of Anhatomirim, by Givry and Duperrey (lunars), is 48° 40' 47" (Vilganhon, 43° 15' 44"). M. Givry, on the 17th of May, 1820, at Anhatomirim, observed an immersion of Jupiter's first satellite, from which the longitude of Vilganhon may be taken 43° 12' 30". The longitude of *Monte Video*, by the transit of Mercury, 1789, calculated by Wurm and Triesneker, is 56° 11' 11"; and M. Ferrer, by lunars, makes it 56° 14' 14": the difference of longitude between Vilganhon and Monte Video, from a mean of five measurements, is 13° 4' 37" (See Note 27), which makes the former, by the first observation, in 43° 6' 24"; and by the second, 43° 9' 27".

The mean of these 24 independent observations is 43° 9' 34.1".

At the head of those who have made *chronometric* measurements for fixing the longitude of Rio Janeiro may be placed Captain FitzRoy, who, with 22 chronometers, made Vilganhon Fort in 43° 8' 45", as before mentioned. Captain P. P. King had made it 43° 5' 3". Captain Owen, in H.M.S. *Leven*, in 1822, by his run from Porto Praya, St. Iago, makes the longitude of Rat Island, 43° 14' 30" (Vilganhon, 43° 13' 47"). Captain Foster, with 17 chronometers, made Vilganhon in 43° 5' 41"; or, according to Dr. Tiarks, 43° 8' 12". Captain Heywood, by his runs from St. Helena, makes Vilganhon in 43° 2' 50", and 43° 1' 58". M. Mackau, in the *Clorinde*, in 1821, makes it in 43° 14' 2". Admiral Roussin, by one chronometer, makes it 43° 13' 56".

The mean of these chronometric results is 43° 8' 15"; and the mean of the chronometrical with the astronomical observations, as given above, will be 43° 8' 55": this longitude is only 10" more than Captain FitzRoy's, and is 5" less than that assumed by Lieutenant Raper.

In the foregoing remarks, the observations have been reduced to Vilganhon, although many of them were determined at different points; and it will be seen that the French authorities have hitherto placed it as much to the *westward*, as Captain King, and others, have given it to the eastward of this position. As most of the longitudes on this coast are referred to Rio Janeiro, it is of the utmost importance that this should be definitively determined.

We have before stated, that Lieutenant Raper makes Vilganhon Island in 43° 8' 50" (5" more than Captain FitzRoy's determination), and finally assumes it as 43° 9' 0", which is 5" less than the conclusion which is to be arrived at from the foregoing observations. Lieutenant Raper's position is deduced from Captain Beechey's moon-culminating stars at Anhatomirim; while the same observer, by the same means, at Rio, makes it only 43° 4' 41".

25. ST. CATHARINE'S to BUENOS AYRES, &c.—*M. Barral*, on a re-survey of the Rio de la Plata, and a portion of the coast between it and St. Catharine's (see page 293), assumed for his first meridian of departure, that of the Cathedral of Monte Video, taking it as 56° 13' 4", which he considered as perfectly settled by the observations of *General Varela*, by mean of the passage of Mercury over the Sun's disc, on the 5th of December, 1789, and the calculations of Messrs. Triesneker and Ferrer. The differences in longitude were thence gained by 4 chronometers.

Captain Heywood, in H.M.S. *Nereus*, with accurate chronometers, made five runs between *Rat Isle*, in Rio Janeiro, and *Monte Video*, as follows:—13° 2' 0", 13° 5' 12", 13° 4' 17", 13° 1' 4", and 13° 3' 9", = mean, 13° 3' 12". Hence 43° 8' 12" (*Rat Island*) × 13° 3' 12" = 56° 11' 24", the longitude of the Lighthouse on the Mount, which is 1' 35" to the westward of Rat Island. Its latitude, according to M. Barral, is 34° 53' 2". *Captain* King has given it as 34° 531' 2".

The Spanish Survey of the River Plata gives the longitude of the Lighthouse as 56° 16′. On the contrary, the British officers on this station, in 1810, assigned to it the longitude of 56° 2′ and 56° 3′ only; and thus, we believe, it stands on several charts to this day.

The meridional difference between *Monte Video*, and the Cathedral of *Buenos Ayres*, is about 2° 8′ 45″. The British officers make it 2° 10′; the Spanish, 2° 7′ 30″. Its latitude is 34° 36′.

The Cathedral of Monte Video, on the authority quoted by Captain Owen, in his Tables, is in lon. 56° 20′ 36″; which we conclude is 7′ or 8′ too far to the West.

Again, *adverting to St. Catharine's*, the difference of Messrs. Roussin and Barral in the longitudes of Anhatomirim, &c., is 5′ 58″, the greatest being that of M. Roussin.

26. **Anhatomirim.**—The difference of longitude between Fort Sta. Cruz of Anhatomirim, and Vilganhon Island at Rio Janeiro, according to the Baron Roussin, is 5° 26′ 20″; and by another measurement, 5° 25′ 9″. Captain FitzRoy makes it 5° 25′ 45″; Captain Beechey, 5° 23′ 31″; Captain King, 5° 24′ 37″; Captain Foster, 5° 24′ 42″; and M. Givry, 5° 24′ 59″. The mean of these is 5° 25′ 3″, which, added to the longitude of Vilganhon, makes 48° 33′ 58″.

Captain Beechey's observations place it in 48° 33′ 54″; and by another computation, 48° 34′ 47″; mean, 48° 34′ 20″; which differs 25″ from Captain FitzRoy's chronometric result.

The longitudes of the coast, between St. Catharine and the River Plata, have been adjusted by the preceding data.

27. **Monte Video.** The difference of longitude between Rat Island, Monte Video, and Vilganhon Island, according to the chronometric measurement of Captain FitzRoy, in the *Beagle*, is 13° 4′ 24″. The same by Captain Foster, 13° 4′ 45″; by Captain King, 13° 4′ 27″; by M. Barral, 13° 4′ 21″; and in the *Beagle*, in 1830, 13° 4′ 30″. The mean of these meridional differences, which so nearly coincide, is 13° 4′ 37″, which we have taken, and which, added to 43° 8′ 55″, the longitude of Vilganhon, gives the longitude in the Table.

The observations that have been made for determining the position astronomically, also, very nearly agree with this result. One was made by M. Ferrer from the passage of Mercury, in 1787, as 56° 13′ 30″; and a similar observation by Triesneker, in 1789, made it 56° 12′ 6″, or, as calculated by Ferrer, in 56° 13′ 36″. (See Note 24.)

28. **Staten Island.**—This Island was accurately and completely surveyed by Lieutenant E. N. Kendall, of H.M.S. *Chanticleer*, in 1828. The positions are those of Captain FitzRoy.

29. **Cape Horn.**—The longitude of the summit of this Cape is stated in Captain King's Tables as 67° 10′ 53″ (= 67° 14′ 53″), and in Captain FitzRoy's Tables as 67° 16′ 0″ (=67° 16′ 15″), which, as the distance from Port Desire, as run by the *Beagle*, in 1832, was found to be 1° 20′ 40·5″, we have placed it in the Table according to this result.—(See also Captain King's Tables, p. xiii.) But it may be remarked, that taking Port Famine as 4′ more than Cape King's position (see next Note), it will still bring it 1′ 22″ East of Captain FitzRoy's. We have not attempted to reconcile this difference: the remainder of the coasts of Tierra del Fuego are according to Captain King's determination.

30. **Port Famine.**—The Observatory at this place is the zero point of the surveys of Captain King, and which he places in 70° 54′ West of Greenwich, assuming Rio Janeiro to be in 45° 5′ 3″ West.—(Sailing Directions for Patagonia, &c., Introd. p. vii.) But as we have taken the latter as 3′ 52″ West of this, it would make it in 70° 57′ 52″. Captain King, by several runs, makes the meridional difference between Monte Video and Port Famine as 14° 44′ 31″; this, added to the longitude of the former place, would make it 70° 58′ 3″. Lastly, Captain FitzRoy makes 5° 2 20″, as the difference between it and Port Desire; this gives 70° 57′ 54″. It will, therefore, be sufficiently near to assume it as 70° 58′ 0″, which is 4′ West of Captain King, and 15″ West of Captain FitzRoy's determination. The positions of Tierra del Fuego are those of Captain King, with the addition of 4′ to the longitude.

31. **VARIATIONS OF THE COMPASS.**—The variation at Cape S. Roque, as heretofore noticed, is about 4° 55′ W.; at the entrance of the River Parahyba, 5° W.; Pernambuco, 4° *48′ W.; Cape St.* Augustin, 4° 30′ W.; Islea St. Aleixo, 4° W.;

The Cape Castle, according to the celebrated Abbé de la Caille in 1753, lies in	18°	24′	52″E.
The astronomers Mason and Dixon, in 1761, placed it in	18	23	15
Captain P. Heywood, by run from St. Helena	18	26	5
Captain Owen, in 1822	18	21	0
Captain Horsburgh, from various runs, &c.	18	28	30
Finally:—the Observatory, by Mr. Thomas Henderson, is in	18	28	45
The Citadel flagstaff	18	25	53
The Devil's Peak	18	26	39
The Lighthouse	18	24	9

39. **VARIATIONS OF THE COMPASS ON THE AFRICAN COAST.**—In 1826 the variation near the Cape Sierra Leone was 19° W.; and it varies but little between this and the River Benin, where, in the same year, it was found to be nearly the same. At Corisco Island, 20° W.; Yumba Bay, 21°; Loando to Benguela, 23°; at Port Alexander, 24°; Cape Frio, 26°; Walvisch Bay, 27°; Angra Pequeña, 28°; Angras Juntas, 29°; Cape Voltas to Table Bay, 29°; Algoa Bay, 30° W.

SECTION II.

GENERAL OBSERVATIONS.

ON THE WINDS, SEASONS, TIDES, AND CURRENTS; AND ON THE ANIMALS AND PHENOMENA OF THE OCEAN.

1.—OF THE WINDS AND SEASONS.

THE nature of the perennial, periodical, and variable winds which prevail to the northward of the Equator, and which include the Harmattan on the African coast, with the south-easterly trade wind of the Ethiopic Ocean, have been described in our former Book for the Atlantic Ocean. But on the latter (the S.E. Trade) some further explanation may be given, and prove useful.

The S.E. trade wind has been described as more regular than the N.E., and much more serene. Its northern limit, as shown on the charts, and in the volume above mentioned, comes up, in the summer season of the northern hemisphere, very far to the northward of the Equator; so that its mean annual limit is in about 2½° N. This peculiar feature is found to occur both in the Atlantic and in the Pacific Oceans, and it might be supposed would do so in the Indian Ocean, but for the peculiar conformation of the continent and ocean, which modify the action of the regular trade winds, and cause monsoons.

The line of junction, or the space where the N.E. and S.E. trade winds meet, is to the North of the Equator, and here by neutralising each other they form a belt of calms, known to sailors as the "rains," or "doldrums." In our Atlantic Memoir, as above stated, *10th* edition, 1853, p. 119, a table is given of the mean breadth that each trade wind occupies in the several months, and also of the calm zone between them, to which the reader is referred. This feature of the zone being to the North of the Equator is owing to the unequal distribution of land and water in the two hemispheres; the land and its greater power of absorbing heat being far predominant in the northern, and occasioning the disturbance of the symmetrical arrangement of the trade winds here alluded to.

It has been remarked that both trade winds, in the *Eastern* regions, blow more directly, that is, more northerly or southerly toward the Equator than in the ocean at large. The S.E. trade, in particular, continues very far southerly; so that, within a line drawn from 2° N. lon. 15° W. towards Sierra Leone, the wind is seldom to the eastward of S.E., but becomes more and more easterly as it proceeds westward.[*]

ON THE EASTERN COAST OF BRASIL, between the months of September and March, the winds generally prevail from N. by E. to N.E. by E.; between March and September the prevailing winds are from E. by N. to E.S.E.

The former of these are generally termed the NORTHERLY MONSOON, and the latter, the *southerly* one; although there appears, in fact, to be no direct and opposite change in them on or about the equinoxes, as is generally the case with the winds so called. These winds are simply a continuation of the S.E. trade, *which changes its direction* as above described, and as influenced by the land on its approach thereto.

The influence of the land, or rather of its *temperature*, is more or less according to the action of the sun at the particular seasons of the year. When the sun is to the northward, no particular difference is observed in the S.E. trade, but it may be carried within sight of the coast, with scarcely any deviation; nevertheless, about both equinoxes, but more especially when the sun is advancing to the northward, calms and very light winds, with apparently no settled quarter, will prevail near the coast; and this may be said to be more particularly the case on that part of it between the Abrolhos and Cape Frio. As the sun advances to the southward, the trade wind will gradually come round to the north-eastward, and will have its retrograde movement with the return of the sun to the equinox. At this latter season ships, on approaching the coast, will begin to observe this northerly inclination of the S.E. trade within 4° or 5° of it, and which they will find gradually to increase as they incline to the westward.

---

[*] In March, 1833, H.M.S. *Tartar* crossed the Equator, after a favourable passage from Teneriffe, in lon. 22° 13′ 20″ W. with a strong breeze from the S.S.E. This was the first of the S.E. Trade, which was thence found to the lat. of 17° S. and lon. 35°.

An intelligent commander in the East India service reported, some years ago, that he had once found the N.E. Trade wind reduced in breadth to 9° only, and that it then extended to several degrees across the Equator. The *month* is not given; it was probably March.—(*Major Rennell.*)

Within a few miles of the coast, and in the different roadsteads and harbours, the wind generally blows directly upon it; and in the deep harbours, and upon the shore, this is generally superseded by a land breeze, which sometimes lasts the greater part of the night. About Rio de Janeiro this land breeze sometimes extends as far to seaward as Round Island, while at Pernambuco it rarely reaches the roadstead.

The preceding remarks are those of Captain Hewett. Pimentel, and, after him, M. D'Aprés, has said that the winds of the northerly monsoon, between September and March, are from N.E. and E.N.E., or less northerly than as above; and that those of the southerly monsoon are from E.S.E. to S.S.E., or more southerly. It may, therefore, be admitted that they do sometimes prevail more from the South, and that those near the North but seldom occur.

Mr. Lindley, in his narrative of a Voyage to Brasil, having resided a considerable time on shore, at Bahia, &c., has described the in-shore wind as follows:—"From Cape St. Augustin (southward) the wind blows, nine months in the year, chiefly north-easterly in the morning, and north-westerly during the evening and night: this continues gradually changing along the coast, till, at Rio Janeiro and the Rio Plata, it becomes a regular land breeze from evening till morning, and throughout the day the reverse. During the three stormy months, that is, from the latter end of February to that of May, the wind is, generally, southerly, blowing very fresh and squally, at times, from the south-west."

Captain Hewett has observed, that the winds off Cape Frio are seldom found to the southward of East; and in the northern monsoon they are generally to the northward of N.E. Heavy and violent squalls are occasionally met with in rounding the cape, to obviate the effects of which every precaution is required.

The same officer adds that, at Rio de Janeiro, the sea breeze varies in its commencement from ten to one o'clock in the forenoon, and ceases in the evening between the hours of seven and eleven. At the full and change of the moon violent squalls from the N.W., named by the Portuguese "TERRE ALTOS," immediately superseded the sea breeze, lasting from four to six hours.

The late *Captain Peter Heywood* in the British frigate *Nereus* was for three years on the Brasil station, and the greater part of that time in or near the River Plata: this gentleman describes the winds hereabout as follow:—

"At the ENTRANCE of the RIVER PLATA the prevailing winds during the summer months, from September to March, are north-easterly, with tolerable clear weather over head, but a dense atmosphere near the horizon. These winds haul gradually to the eastward as you advance up the river; and about the full and change of the moon strong breezes from the south-eastward are common at this season, accompanied with rain and foul weather. At Buenos Ayres, during the summer months, the S.E. winds are generally fresh in the day time, hauling round to the northward during the night.

"During the winter months, from March to September, the prevailing winds, at the entrance of the Plata, are S.W. or more westerly; but, up the river, more generally from the northward, than from the southward of West.

"The winter season is the best, in point of weather, at Buenos Ayres; for the winds, being chiefly from N.W. to S.W., the water is smooth, and the communication can be kept up between the shore and the shipping with more facility. The weather is sometimes, but not frequently, foggy. Fogs are most common in the months of July, August, and September, and prevail more at the entrance of the river, as far up as the S.E. tail of the Ortiz, than above the banks."

The VARIABLE WINDS, in the southern regions, being generally similar to those of the Northern hemisphere, require no description.

BRASILIAN COAST, ETC.

Having before given a general description of the Winds on and near the Brasilian coast, we now add some additions to the same from the '*Pilote du Brésil*' of the Baron Roussin, 1827.

This gentleman has observed that the general classification of the winds into two monsoons, according to Pimentel, &c., requires considerable modification: for, in his experience on the different parts of the coast, he found the winds very variable in the two seasons: for example, in five months of a southern monsoon they had not forty days with the wind E.S.E. or S.S.E., though, on another coast, easterly winds may more certainly be expected. The navigators of these coasts reckon much more on easterly winds than any others in the months of October, November, and December, which may be considered as intervening months between the monsoons. The summary given hereafter, in the subjoined Tables of Winds, &c., will show, from nearly one year's navigation on the coast of Brasil, their ordinary mutability. The first Table shows the observations made on 130 days of the southern monsoon, commencing on the 20th of May, 1819; and it may be noticed that there were only thirty-five days of wind from the S.E. quarter, such as might be expected according to the general classification. During thirty-eight days the winds were from the N.E. quarter, such as might be expected in the northern monsoon, and afterwards there were six days with the wind between North and West, and twenty-three days between West and South.

By the second Table, which includes the observations of one hundred and fifty-three days of the northern monsoon, commencing 1st September, we find seventy-five days of south-easterly winds, seven days with the wind between North and West; six days with the wind between South and West, and only sixty-two days with the wind between North and East.

In the midst of these varieties we find again certain particular winds; the one accidental, the others periodical, and which seem to be of a local and limited nature. Of this class are the S.W. squalls, which come on during the rainy season, at the times of new and full moon: the Brasilians call them *Rebojos*, and they prevail for three or four days; moderate when accompanied by rain, but with greater strength when the sky is unsettled.

The other accidental winds are of the nature of squalls, and are found principally in the environs of the Abrolhos; hence they are called *Abrolhos Squalls*. They are most frequent in the months of May, June, July, and August, when the season is very wet, and the general wind from E.S.E. They proceed, it is said, from small white and round clouds, and with a force that is irresistible.

The Land Breezes, on the coast of Brasil, are nearly regular, and are felt all night during the greatest part of the year. They are found on all points of the coast between Maranham, in the North, and St. Catherine's, in the South, but vary in force and regularity according to the season and place. On approaching the Equator, the more discernible they become. At *Rio Janeiro* they occur daily, and seldom rise before nine o'clock in the evening, and do not finish till the morning of the following day. Such, too, is the case at *Espirito Santo*, *Porto Seguro*, *Bahia*, *Pernambuco*, and other places similarly situated.

During the northern monsoon the land breezes are more regular than in the southern monsoon; they are also stronger, because then the volume of wind comes more direct, and beating constantly against the coast, the re-action causes a freshness in the weather on shore, which produces a more regular and stronger effect.

In the southern monsoon the winds are more variable to the South and S.W.; the land breezes are mixed up with them and are not to be distinguished.

The sea breeze is mostly stronger and broader than the land breeze. This is the effect of vapour raised from the earth and accumulated in great quantity during the day; condensed afterward by the coolness of night, it falls and causes the air to expand with greater force.

Vessels cannot always be certain of finding the land breezes at a certain time in making for the ports of Brasil. But, in general, on advancing southward, following the coast, the winds in the rainy season will be found between South and West, and between the *Alagoa dos Patos* and *Cape Frio* it sometimes blows violently from between S.E. and S.W. and from the N.W., at times, there are hurricanes, similar to the *Pamperos* of the Rio Plato, which are dreadful. *Of these, the* prognostics are the same as of a European gale. If the *sun sets environed with thick* clouds, if the land appears very distinct, and seems to rise up, approaching the observer, you may expect the winds to blow from South to S.W. till it brightens up. Fortunately these gales do not long continue; when furious, they rarely last more than 24 or 30 hours, and their strength and duration diminishes on approaching the Equator. When the S.E. or S.W. winds of the southern monsoon are moderate, they come strong from the eastward during the day and approach the West during the night.

So soon as the wind approaches the East the weather always clears up. To the contrary when it turns toward the West, and the mist comes on more and more thick. The winds are stated to come from the eastward in all their tropical seas; this is their natural course; the interruptions or changes which occur, in advancing to the land, are nothing but the crisis when passing from one to another. At 7 or 8 leagues from the coast the general motions of the monsoons will be found.

Again, from a communication of *Lieutenant John Evans* (a), R.N., on a passage toward Cape Horn, we have the following remarks, dated 30th May, 1824. Wind steady at N.N.E.—"It appears to me, from all that I have heard and read on the subject, to be rather an extraordinary circumstance our carrying the wind from N.N.E. in the manner we have done, and are still doing, at this time of the year, in the parallels we are passing. After crossing the Equator we had the S.E. trade inclining more towards the East than could have been expected, with the sun having northern declination increasing; seldom blowing from the southward of S.E., and generally steady at E.S.E. until the 26th instant, when, in lat. 20° 2′ S., lon. 38° 11′ W., being about 2° from the Brasilian coast, the wind hauled round to the northward and eastward, and since the 27th we have experienced it steady at N.N.E., generally falling lighter and lighter toward the evening, and freshening up again at night.

"While sailing along the Brasilian coast, I was not so much surprised at the northerly inclination of the wind; although I believe that during the months of the S.E. monsoon on this coast instances have been very rare (I have never heard of one, although I have been several years upon the station) of a ship sailing along the land, as we did, with the wind sometimes due North, and never to the eastward of N.N.E.; but now that we have, since taking a departure from Cape Frio, increased our distance so much from the coast, our position being opposite to the deep bight that falls in westward, to the southward of Rio Janeiro, it certainly does appear to me a strange circumstance that the wind should still continue steady at this point, being entirely at variance with all the authorities I have consulted with respect to the prevailing winds in this hemisphere at this season; neither agreeing with the southerly monsoon of the coast of Brasil, nor the S.E. trade in the open ocean.

"This northerly wind continued from 20° 2′ S. and 38° W. to 30° S. and 46° W., veering then to the N.W., round to the southward, and taking the sweep of the compass round again to the northward."

The SEASONS of BRASIL may be considered as two only; the *Dry* and the *Rainy*. On all the *Eastern* coast the dry season commences near the end of September, and continues until February, and during the five months of its continuance thunder-storms frequently occur, but it seldom rains.

The rest of the year includes the rainy season; though the rains are not so constant as fully to justify the name. On the *Eastern* coast the only months which may be thus considered are May, June, July, August, and sometimes a part of September. On the *North* coast the periods vary; for the heavy rains there commonly begin in December; although, as on the eastern coast, they include May, June, July, and August.

The CLIMATE of PARA.—Situate immediately beneath the Equator, the climate of Para is hot and sultry; the thermometer averaging throughout the day from 84° to 89° in the shade; and at night occasionally falling as low as 75°, with very heavy and copious dews, especially upon the river, wetting the boats as if a shower of rain had occurred. The river water is warm, generally 84°; as the air cools in the evening, it chills the surface of the water; and, in doing so, it emits steam or aqueous vapour into the cool atmosphere. Thus the fog, or mist, arises from the warm water at the river, and is not a deposit of dew from the atmosphere upon a surface cooled by radiation. Precisely similar to what occurs in the colder regions of the North, when water is rapidly losing its temperature, previous to freezing, it smokes with steam, and emits a vast volume of vapour, not a drop being deposited on the land: and it is to this that we must refer the mists and fogs, rising from the warm valleys, often before sunset, and not ascribe them to the deposit of dew from the atmosphere.

There is no difference of temperature throughout the year; the mean is 84°. As already shown, there are two seasons, the wet and dry. The wet or rainy season commencing in the latter end of December and continuing until July, raining more or less, every day, for many hours, without intermission. The air is sultry and oppressive, with light variable winds, the most awful thunder and lightning, violent squalls of wind occasionally from different points of the compass, and tremendous heavy rain. Ships are often detained several months, not being able to take in their cargo.

It generally begins to rain about eleven o'clock in the forenoon, and continues until nine or ten at night. The early part of the morning from midnight is mostly fine. The thunder-storms take place, most frequently, in the afternoon, about two or three o'clock. The same circumstance occurs at Rio Janeiro. The period of the hour of the storms is not confined to this place, but occurs at many others. The country is flooded in many parts during the rainy season.

The dry season at Para is from July to December. During this period rain is a frequent occurrence, and thunder-storms likewise in the afternoon. This is the *windy season*, it blowing fresh from the N.E. during the day, with a light breeze only in the evening. Lightning is frequent in the horizon every night.

Although, from the appearances of the banks of the Rio Para, its muddy beaches and masses of filth, it might be supposed to be the "centre of yellow fever," yet those who sleep on the river are generally healthy, and enjoy a fortunate exemption. Intermittent fevers or agues, however, attack new comers, and higher up the river they are more common. Those employed in the gathering of sarsaparilla are very frequently attacked with fever, and many natives die of it. Dysentery, tetanus, &c., are common. The small pox, in 1825, is said to have destroyed 5,000 people, and to have proved the most destructive scourge they ever experienced. Hydrophobia is almost unknown.[*]

CLIMATE AT MARANHAM.—The wet season commences at Maranham in the latter end of December, or the early part of January, and continues until June or July; during the whole of these months an immense quantity of rain falls, the most awful thunderstorms occur, in which lightning is remarkably vivid; the weather is oppressively hot, and the wind light and variable, veering all round the compass in the course of twenty-four hours. The dry season continues from July to December, in which period there is, generally, a fine fresh breeze from the N.E. or E.N.E. The nights are attended with lightning, but no thunder, and a few showers of rain sometimes occur.

The climate of Maranham is naturally hot, and, as at Para, there is little variation of temperature throughout the year, the average being 82°. The general range of the thermometer is from 76° at night to 86° in the day time, even in the most shady situations. The barometer ranges from 29.92 to 30.1, the average being 30 inches, and the horary oscillation about the tenth part of an inch; it falls from 9 a.m. to 3 p.m., and does not appear to be affected by the fall of rain.

The climate here is generally regarded as healthy; the most sickly time being during the transition from the wet to the dry season, or about July. The wet season is not considered unhealthy.

In the province of Seara or Ciara, to the East of Maranham, the droughts are occasionally severe. A few years ago some thousands of persons perished from the want of water. Many fled to Rio Janeiro and to Maranham, and the crops were nearly all destroyed.[†]

The CLIMATE of FERNANDO NORONHA, though abounding in vegetation and moisture, is very healthy. The dry season commences in July, and continues throughout August, September, October, November, and December. The wet season is from January to June, inclusive. In the first three months of the rainy season thunder and lightning are common; and heavy surfs prevail, especially about Rat Island, at the same period when similar surfs prevail at Ascension and St. Helena, as shown hereafter, with the wind light and variable from the N.W. In the dry season there is, at times, a very scanty supply of water here, but, in the wet season, a little deluge.[‡]

[*] Mr. Webster's Narrative of the Voyage of the Chanticleer, Appendix, p. 330—342.

[†] *Voyage of the Chanticleer, Vol. II. p. 60.*

[‡] Idem, Vol. II. p. 26.

River Plata.—The climate of Monte Video is temperate, but fluctuating and tempestuous. It is much healthier than that of Buenos Ayres, and totally free from those marsh fevers which are common at the latter place, in consequence of its situation up the river. In winter slight frosts are sometimes observed, but no snow has been known to fall at Monte Video. The mean temperature of the winter is about 55°; that of the river water at the time being the same. The weather, during spring, is very variable and liable to storms. In the summer and autumn it is sultry and oppressive, especially during the long calms which take place; but in the middle of the day there is generally an agreeable breeze from the S.E. Northerly winds are accompanied by rain, and a S.E. wind is frequently so; but the wind from the S.W. is most free from it. Violent gales are common at all seasons of the year, attended frequently with thunder-storms; but these are most severe during summer and autumn. Sometimes the thunder-storms are accompanied by hailstones of a considerable size, which not only break windows, but kill poultry; they often terminate in a *pampero*, the well-known hurricane of the country. It is said that, in a pampero, sand and small gravel have been blown on board the ships in the roads, a distance of 7 or 8 miles from shore.

Mr. Webster has described the indications of a pampero, from his own observations, as follows:—The weather is sultry during a few days, with a light breeze from the East or N.E. ending in a calm. A cool light wind then sets in from the South or S.E., but confined entirely to the lower strata of the atmosphere, while the clouds above it are moving in the opposite direction from N.W. to S.E. The northern horizon, as night advances, becomes dark with heavy lowering clouds, accompanied with lightning from East or N.E. The southern wind now ceases, and is followed by variable winds from the northward. Heavy clouds are thus brought over; and lightning, accompanied by thunder, follows in a most terrific manner. The wind veers gradually to the westward in violent gusts, the lightning becomes more vivid, and the thunder more awful; a gale of wind follows from the S.W. more violent, but of short duration, and fine weather ensues.

These pamperos are very destructive to shipping, and frequently occasion wrecks and the loss of boats. The lightning is beautifully coloured, presenting the hues of orange, violet, and pink. Mr. Webster adds, "I have also witnessed at Monte Video very remarkable instances of electric light, playing like the *aurora borealis*, at an altitude of 20° above the horizon. One evening, October 4th, I observed an arc of light which remained permanent, with a tremulous motion, for the space of twenty minutes; a strong gale of wind was blowing at the time: it was of a pale yellow colour, and flashes of lightning frequently appeared beneath it. Meteors or falling stars are very rare, and earthquakes are scarcely known here."

During a visit to the River Plata by Captain King, in the *Adventure*, a pampero of unusual violence occurred. "On the 30th of January, 1829, after some intensely hot and sultry weather, we experienced a severe *pampero*. It was preceded by the barometer falling to 29.50, and by a strong N.W. wind, which suddenly veered round to S.W., when the pampero burst upon us. Our ship and boats fortunately escaped any bad effects from the violence of the squall, which was so strong as to lay the former, at anchor, upon her broadside. The spray was carried up by whirlwinds, threatening complete destruction to everything that opposed them. In less than half an hour it had diminished to a strong S.W. gale, which lasted during the night." "On the night of the 2nd of February we experienced another very severe pampero, during which, one of the *Beagle's* boats, hauled upon shore, was blown to atoms. The barometer had previously fallen to 29.39."*

Captain Heywood's Remarks concerning the Winds, Weather, Tides, and Currents, in the River Plata, are included in the Descriptions and Sailing Directions hereafter.

Of the Winds and Weather off the Patagonian Coast, between *Cape Blanco* and the *Virgin's Cape*, Captain King says, "Our experience of the wind and weather upon this coast was not sufficient to enable us to form any judgment of the changes that are liable to occur. The prevailing winds, particularly towards the southern portion, are from the S.W., from which quarter the gales are the strongest; but near the land, during the summer season, they veer about between South and W.N.W.; and in the winter, when the sun has northern declination, they hang more commonly to the northward of West. Northerly winds are accompanied by misty or foggy weather, particularly on that portion of the coast between the Rio de la Plata and Port St. Elena.

---

* Narrative, &c., Vol. I. p. 189.

The marine barometer here is of signal advantage. It is low with a northerly wind, but so soon as the column has fallen to 29 inches or lower, and ceases to fall, a change of wind from the S.W. may be expected; which commences with, or very soon follows, the ascent of the mercury; the wind then freshens and blows hard, and the weather clears up. The clouds are white, of large size, and rounded form, and the air becomes elastic, dry, and cold. During the existence of, and for some days preceding, a northerly wind, there is generally a very copious deposition of dew; indeed, the appearance of it is an infallible presage of the change. With northerly winds the air is mild and excessively damp, but when they blow from the opposite quarter it is cold and dry. The wind rarely blows from East, but sometimes obliquely toward the coast from N.E. or S.S.E.—(*Directions for the Coast of Patagonia*, by Capt. P. P. King, R.N., p. 17.)

STATEN ISLAND.—The climate of Staten Island is remarkably humid; and very few days can be passed there, in the course of the year, without rain; and it is rather remarkable that, however fine the weather may have been in the course of the day, some rain generally falls at night. Rain, however, is frequent there in all seasons of the year, and the sky is generally overcast. Thunder and lightning are scarcely known. The temperature may be considered as equally low, and varying little throughout the year. Frost is not very severe, nor very common in winter, and the snow does not lie long on the low grounds. The weather during summer is cool, but still humid; and, as a general characteristic, may be considered boisterous, unsettled, wet, and dull. Vegetation lingers slowly in its summer's bloom, and is not nipped by the severity of the winter's frost.

On shore the weather was a few degrees warmer than on board; and at night it was colder. The most retired harbours of the island are not frozen. The wind is generally from the westward nine days out of ten, ranging from S.S.W. to N.N.W. Gales from the S.W. prevail during the summer, and from the N.W. in winter. Easterly winds are most prevalent in the winter months.*

TIERRA DEL FUEGO.—In the winters of Cape Horn, and its vicinity, wind, accompanied with rain, sleet, snow, or hail, is the prevailing characteristic. The humidity is excessive; for besides that arising from the vast expanse of ocean by which it is surrounded, rain, more or less, falls every night. The rain is so violent and incessant, that one might suppose the waters of the firmament were again falling in the shape of a second deluge. The gullies between the hills become so many courses for torrents of water; and the continuance of the rain at times is so protracted, that a temporary gleam of sunshine is cheering to behold.

S.W. gales, attended on their onset with thunder and lightning, are exceedingly violent about the Cape, and are accompanied by the most terrific squalls, which may almost be considered as hurricanes. They rush down the ravines in the hills with most awful violence, threatening destruction to all before them, carrying the sea up in spray to the height of some hundred feet. The N.W. gales are not generally considered so heavy as those from the S.W. quarter; they are always accompanied by rain, but, nevertheless, blow with great force, and frequently veer round to the S.W. without abating their fury. The wind again will commence in the N.W., and be rapidly succeeded by a gale from some other point of the western quarter, most generally the S.W.

Easterly winds are reported to be most prevalent in the winter months of June and July, but they seldom blow with much strength, nor are they of long duration. It may be generally expected that they will be succeeded by a westerly gale. The weather accompanying them is mild and fine, but there are a very few days in a month of fine tranquil weather. A gentle breeze from the N.W. is sometimes attended with fine weather. None of the little bays or harbours hereabout are ever frozen up, nor are those of Staten Island.

All circumstances prove that the southern regions of the globe are milder than the northern in equal latitudes. The Fuegian Indians are perfectly naked; they care for no dress, and seldom use it. Where such is the case the cold cannot be very severe.

The fact appears to be, that a low mean temperature prevails throughout the year in the Southern Seas: at Cape Horn the sun produces but little effect in the summer, and there is no intensity of heat for a few months as in the northern regions, owing, apparently, to the disproportionate expanse of ocean to that of land. The climate of the Falkland Islands corroborates this assertion: there it is mild, the thermometer being seldom seen so low as 32°, generally ranging about 40°. Snow never lies there for twenty-four hours, excepting on high land: the harbours are never frozen up, and the crews of vessels go barefooted with impunity.

---

* *Voyage of the Chanticleer*, Vol. I., pp. 129, 130.

In consequence of the equability of temperature in the climate of Cape Horn, produced by the immense expanse of ocean, the summer is much cooler than in the same parallel of the northern hemisphere; for there is no terrestrial radiation; nothing, as it were, to catch the sun's rays, which fall almost powerless on a wide extensive sea: but the winter compensates for this deficiency, and a remarkable degree of mildness prevails; for as the sea preserves nearly a uniform mild temperature throughout the year, above 44°, the air over it can never remain much below it for any great length of time.

Hail is frequent at a temperature from 42° to 48°. The nights at Cape Horn when clear are remarkably so; the stars shining with peculiar brilliancy, and appearing as large as planets; this arising, no doubt, from the humidity of the atmosphere, which increases its transparency. The cloudy nights prevent any radiation; and as the sun seems to act a subordinate part in this climate, there is a perfect equality of temperature throughout the twenty-four hours.

With severe S.W. gales the barometer falls, and very considerably, and the finest weather has been found with the lowest state of the barometer. A gentle N.W. breeze has been attended with very fine weather, and the barometer below 29°. The height of the mercury is perpetually fluctuating, showing a constant change in the aerial column.*

The heaviest and most lasting gale, says Captain Weddel, that blows in the neighbourhood of Cape Horn, is from South, occasionally shifting a point or two each way. This gale I have frequently known to come on in a squall, and continue, in the tempestuous months, to blow from thirty-five to forty hours together. The southern horizon, filled with rising clouds, heavy and white, in a blue sky, is a sure indication of a lasting gale, with snow squalls. A complete calm commonly follows this wind, which, however, is not very frequent. The wind at East invariably rises light, and generally increases to a strong breeze; but when it veers from East to S.E., a strong gale may generally be expected, with snow or rain squalls.

A North gale also comes on gradually, and toward the end, which is generally in about thirty hours, it draws from the N.W., and brings rain, and presently shifts into the S.W., without ceasing to blow, and continues from that point twelve or fifteen hours. All gales are of shorter duration in summer than in winter; and it may be remarked that a vessel may anchor anywhere for shelter from a S.W. wind without the fear of its shifting to the northward; but the contrary must be guarded against, as the wind shifts from N.W. to S.W., continuing to blow with great violence.

---

* Voyage of the Chanticleer, Vol. I., pp. 193, 202. *Captain King* says:—"With respect to the utility of the barometer, as an indicator of the weather that is experienced off Cape Horn, I do not think it can be considered so unfailing a guide as it is in the lower or middle latitudes. Captain FitzRoy, however, has a better opinion of the indications shown by this valuable instrument; my opinion is, that although the rise or fall at times precedes the change, yet it more frequently accompanies it."—*Narrative of the Voyages of the Adventure and Beagle*, Vol. I., p. 465. And that fine weather may occur when the barometer is very low, as above stated, the following extract from the same work will demonstrate:—"April 2nd, 1830 (near Cape Horn), the glass had been falling so much, and was then so extremely low, that I thought it prudent to prepare for the worst, and struck topmasts. Notwithstanding the unusual fall of the barometer and sympiesometer, and their still continuing to sink, this day was as fine, and seemed likely to continue so, as any day I had ever seen, therefore we took advantage of it. 3rd and 4th.—Still very fine weather, although the barometer and sympiesometer were lower than I had yet seen them in this country. 5th and 6th.—Two more fine days, with a very low glass, shook my faith in the certainty of the barometer and sympiesometer. During those days the wind had been light from N.N.W., and twice before I had known these instruments to be similarly affected during exactly similar wind and weather. The mercury in the barometer had now fallen to 28.94, and the oil in the sympiesometer to 28.52; the thermometer ranging from 40° to 48° Fahrenheit. 10th.—Still fine steady weather, notwithstanding the unusually low fall of the barometer. 12th.—The glasses had at last been rising; and during the past night and this day the wind was very strong, with much rain. The wind shifted from the northern quarter into the southern, drawing round to the S.E., which of course would make the mercury rise higher after being so very low, though the weather might prove extremely bad."—*Ibid.*, pp. 426—429.

In the most windy months N.W. gales blow with great force, when they rise rapidly near that point, and generally last twelve or fourteen hours. To the S.W. of Cape Horn they blow with less violence, but are more durable. In the summer season the winds between S.W. and N.W. frequently blow in gusts of six or eight hours' continuance, at the strength of a brisk gale; it then becomes moderate, and the wind inclines to the northward.

In the summer I have observed the coincidence of fine weather with light easterly winds at the time of new moon, when in South declination, and at the time of full moon to blow strong from the northward. There being many exceptions, however, to the natural action of the wind, produced by localities, I have found it impossible to systematize the indications of the winds and weather satisfactorily. We must, therefore, rest contented with an approximation to certainty in these matters." *

Captain Monteath says, "It is my opinion that the winds near Cape Horn are greatly influenced by the moon's position, and that easterly winds will in general be found more prevalent during the summer months, when that body has attained a high southerly declination; as proofs, I subjoin the following remarks:—

On the 25th of January, 1824, in lat. 56° 29′ S., lon. 70° 57′ W., and the moon's declination 25° S., the wind shifted to the N.E., gradually hauling round to the S.E. until the 30th, when it shifted to the West, it being then new moon, and the declination had decreased to 16° S., the lat. 56° 40′ S., lon. 65° 30′ W.

On the 18th of January, 1825, in lat. 56° 42′ S., lon. 64° 50′ W., new moon, and declination 20° S., the wind (which had been from the S.W.) shifted to the E.N.E., gradually hauling round to S.E. until the 21st, the moon's declination having decreased to 8° S.: the lat. 56° 43′ S., lon. 72° 32′ W. And on the 19th of July, 1825, in lat. 39° 10′ S., lon. 88° W., moon's declination, 2° S., and increasing, the wind shifted to the eastward, and continued between the N.E. and S.E. quarters, until the 29th, it being *full* moon, the declination, 16° S., the lat. 55° 40′ S., lon. 84° 50′ W.

The SEASONS in the vicinity of CAPE HORN have also been described by Captain *Robert FitzRoy*, commander of H.M. surveying sloop *Beagle*. This gentleman reports that the equinoctial months are the worst in the year, generally speaking, as in most parts of the world. Heavy gales prevail at those times, though not, perhaps, exactly at the equinoxes. August, September, October, and November, are the worst months in the year. Westerly winds, rain, snow, hail, and cold weather, then prevail.

December, January, and February, are the warmest months; the days are long, and you have some fine weather; but westerly winds, very strong gales at times, with much rain, prevail throughout this season, which carries with it less of summer than in almost any part of the globe.

March is stormy, and perhaps the worst month in the year with respect to violent winds, though not so rainy as the summer months.

In April, May, and June, the finest weather is experienced; and though the days shorten, it is more like summer than any other time of the year. Bad weather is found during these months, but not so much as at other times. Easterly winds are frequent, with fine, clear, settled weather. During this period there is some chance of obtaining a few successive and corresponding observations. To try to rate chronometers by equal altitudes would be a fruitless waste of time at other seasons. June and July are much alike, but easterly *gales* blow more during July.

The days being so short, and the weather cold, make these months very unpleasant, though they are, perhaps, the best for a ship making a passage to the westward, as the wind is much in the eastern quarter.†

I should say that the summer months, December and January, are the best for making a passage from the Pacific to the Atlantic Ocean, though that passage is so short and easy that it hardly requires a choice of time. For going to the westward, I should prefer April, May, and June.

---

* Weddell's Voyage toward the South Pole, 1822-24, pp. 237, 238.

† But, upon this *subject, see more hereafter*, in the Remarks on Passages, &c.—EDIT.

Lightning and thunder are seldom known; violent squalls come from the Sout S.W., giving warning of their approach by masses of clouds. They are rendered formidable by snow, and hail of a large size.

CLIMATE, ETC., OF THE ISLANDS ASCENSION AND ST. HELENA, FALKLAND ISLANDS, SOUTH GEORGIA, SANDWICH LAND, SOUTH SHETLAND.

ASCENSION.—The climate of Ascension is regarded as singularly healthy. heart of the S.E. Trade wind, in the midst of the ocean, with the driest soil world, and the total exclusion of anything like swamp or marsh, and the absence, of all vegetation, there is nothing to taint the air, or to produce impurity. Fev occasionally been imported from the pestiferous coast of Africa, but there is epidemic or peculiar to this island. A mild species of dysentery is the most co complaint, and beyond this we cannot specify any. The people on the island h healthy appearance, and they expose themselves to the sun without any ill effect. heal readily, fractures unite quickly, inflammatory complaints are not obstinate, and one enjoys uninterrupted good health. Such are the effects of pure air, and so l high temperature conducive to disease, that the enfeebled invalid from Africa re energy and strengthens under the refreshing effects of the sea breeze. The therm ranges in the day from 84° to 92° in the shade, during the period in which the s South declination, the hottest time at Ascension, or from September to March. rarely below 82° in the night. The barometer never rises above 30.1, nor falls 29.8; the mean for the whole year being 29.95. During the hottest period the bar is lowest, reaching 30.0; but, during the cooler half of the year, the barometer higher, and generally above 30.0. From March to September the thermometer from 76° to 82°; and in the evening there is sometimes a little fall of dew, but very rare occurrence.

The rainy season at this island is about March and April, and is sometimes att by only a few slight showers; while other seasons are remarkable for the quantity that falls. The average fall of rain throughout the year is very limited, and it circumstance that constitutes the great drawback to the natural advantages of the i After the rains the air resounds with the chirping of crickets, the plains become with a short-lived verdure from the purslain, the rivers are swollen and even glut a day, and the nourishing fluid is gone, not to return, perhaps, for years.

The coolest season of the year is the driest. During the months of March and lightning is sometimes seen in the North and N.W. quarters, and an occasional thunder is seldom heard. In May the clouds have very frequently a motion fro West and N.W. against the usual trade, and light airs from those quarters also The rains in the lower part of the island generally occur in the night, or in th early part of the morning.

But what has been said of the climate of Ascension does not apply to its "*Mountain*," which will be described in its proper place. Here the temperature from 60° to 86°, averaging about 75°; and the height of the barometer about The mountain is generally more or less obscured by mist some part of the twen hours, and it will be shown hereafter that the condensation supplies a large quan water, for the use of the residents, with some to spare for that of shipping.

The weather is too hot for the enjoyment of any exercise during the day, wh passed by many in listless idleness. The day-break, as is always the case in Equ regions, is short, the sun bursts forth suddenly in unclouded splendour; his heat be oppressive in the early part of the morning, when there is generally but little w counteract his rays; his force throughout the day keeps the thermometer from 84° in the shade, and the walk over the heated and rugged surface of the island, whe a rill of water is to be seen, and where no shady grove invites the wandering step from enticing: but although the heat, at times, comes with the puffs as hot sirocco, it is tempered by a delightful sea breeze; and toward the evening, wh sun's heat is endurable, a person may ramble out and see him depart with incomp splendour; and, as he dips beneath the distant horizon, the whole western skies with the radiance of his golden beams. Suddenly he disappears; twilight quickl *away as he sinks*, and darkness hastens on apace. But night comes on with p charms: where the day has no beauties to display in the land the darkness veils its nakedness: all is serenity, save the murmur of the distant waves, or the twittering shriek of some wandering sea-fowl. Not a cloud is seen to stain the purity of the firmament above, which, as a glassy sea of azure, is studded with its glorious host of clustering stars, shining with peculiar lustre. The night at Ascension is the most delightful time of the twenty-four hours. It is in the still serene hour of night at Ascension, where neither dew nor chilly vapour falls to check the full enjoyment of it, that groups of its inhabitants are seated in social converse beneath the canopy of heaven, or dwelling on the thought of friends far away—of England, home, and love, whose magic spell still holds the captive heart, although on a distant foreign strand.*

ST. HELENA.—The climate of this island, considering that the sun is vertical there twice in the year, has a peculiar felicity of temperature, with mild and serene weather. The hills and upper lands are frequently enveloped in fogs and mists, and even the lower parts of the island are shaded and screened by the passage of light clouds over the sun, whereby the effect of his rays is considerably mitigated. Frequently a light canopy of clouds obscures the sun for several successive days, and the fine breeze which then prevails produces a delightful tropical temperature. Shade is always to be found at St. Helena, for the deep gullies of the island are more or less protected from the sun's rays by the high hills which surround them. These circumstances affect the climate of *James Town*, on the North side of the island, but in the hills a very different state of temperature is found: there a small drizzling rain, or a drifting fog, prevails more or less every day, and the trees drop perpetual moisture. There have been seasons, however, when the island has suffered severely from drought, which has destroyed both crops and cattle; and so solicitous are the inhabitants for the preservation of water, that all persons are interdicted, by a very severe penalty, from cutting down the trees. Much more rain, as is the case everywhere else, falls on the high lands than on the lower; and it is thought that the trees on the hills have considerable influence in attracting moisture.

The following has been given by Mr. Webster, as a summary of the weather at St. Helena. In January some light rain falls, but the pasture lands are dried up. In February sudden and heavy showers frequently occur. In March heavy continued rains prevail, the thermometer in the country being at 72°, in the town at 85°. In April the rains continue, but more light than in March. May is the last month of autumn, and June is the first of the winter, in which some light showers fall toward the end. July is the middle of the winter, when all vegetation is stagnated. August is the last and coldest winter month; the thermometer then is 54° in the country, and 68° in the town. With September the spring commences, and in October sheep shearing is finished. November and December are the hay-making months, which seems anomalous in a tropical climate. At the Cape of Good Hope peaches are ripe in the month of December, while here, more than a month after, they are not half grown. Peaches and pomegranates do not ripen here until April. This is noticed as an instance of the difference of temperature between islands and continents.

Lightning is a most rare phenomenon at St. Helena; and it is not known that thunder has been heard here; the climate, generally, is considered as salubrious.†

The FALKLAND ISLANDS.—The late Captain (afterwards Admiral) John M'Bride, kept a regular journal of the winds and weather at the Falkland Islands, from the 1st of February, 1766, to the 19th of January, 1767, which was published in 1775 by Mr. Dalrymple. The journal concludes with the following general remarks.

"From looking over the foregoing journal of the winds, for the space of one year, they will be found to prevail in the western quarter, and generally blow a close-reefed topsail gale, with a cold air. In November the winds begin to be more frequent in the N.W. quarter, generally hazy weather, and for the most part blow about sixteen or twenty hours, when it begins to rain; the wind then regularly shifts into the westward, and so on, till it gets to the S.W. by S. and S.S.W., when it blows fresh and clears up. This S.S.W. wind continues for about sixteen hours, then dies away, when the wind shifts again to the N.W. quarter; this continues during December, January, and February, and changes in the manner above-mentioned every three or four days. As March comes on, you have these changes but seldom; and, as the winter advances, they are seldom in the N.W.

---

* Mr. Webster's Narrative, Vol. I., pp. 1—3.

† *Mr. Webster's Narrative,* Vol. I., pp. 368, 370.

quarter, but rather incline to the E.N.E., which is generally accompanied with sleet and snow. There is not the least proportion in the gales between winter and summer. In summer (as I have before observed), as the winds are in the westward, they blow in such heavy squalls off the tops of the mountains, that it is sometimes an hour before a cutter can row to the shore, although the water is smooth, and the distance of but 1½ cables off. In winter the winds are pent up by a keen frosty air: the most lasting gales are those from S. by E. to S. by W., and are extremely cold.

"In January and February the thermometer sometimes rose to 52°, but no higher. In August it once fell to 20°, but was seldom lower than 32°."

Of the isles, in general, Captain M'Bride has said, "We found a mass of islands and broken lands, beaten by storms almost perpetual. Yet this is summer; and if the winds of winter hold their natural proportion, those who lie but 2 cables' length from the shore must pass weeks without having any communication with it."

[It is to be observed that Captain M'Bride's remarks more particularly apply to *Port Egmont,* on the North side of the Great or Western Island.]

In a description of the Eastern Falkland Island by *Don Louis Vernet,* who resided there for several years, it is stated that the climate on this island is, on the whole, temperate; the thermometer never falling below 26° in the coldest winter, nor rises above 75° in the hottest summer; its general range is from 30° to 50° in winter, 50° to 75° in summer. The weather is rather unsettled, particularly in winter; but the showers, whether of rain, snow, or hail, are generally of short duration, and their effects are never long visible on the surface of the ground. Thus floods are unknown; snow disappears in a few hours, unless on the tops of the mountains; and ice is seldom found above an inch thick. Thunder and lightning are of rare occurrence; fogs are frequent, especially in autumn and spring, but they usually dissipate toward noon. The winter is rather longer than the summer, but the difference is not above a month; and the long warm days of summer, with occasional showers, produce a rapid vegetation in that season.

Lieutenant Moody, the governor of the Falkland Islands, in a despatch, dated October 1st, 1842, says, "In a former report I noticed the extraordinary dryness of the atmosphere, produced chiefly by the constant winds of summer. During the past winter months of June, July, and August, the excess of moisture and dampness has been equally remarkable, unaccompanied, however, by rain, and, comparatively with England, there was but little snow. The ice has been sufficiently thick to bear the weight of a man twice, for two or three days together; and the thermometer has occasionally been as low as 25°, and once 18° during the night. The wind has been by no means so strong or violent as in summer, and calm days and sunshine occurred very often, much more frequently than in England.

"There have been only three strong gales (one occurred while H.M.S. *Carysfort* lay in the port, and it was accompanied with a heavy fall of snow,) since April, except from the 18th to the 24th of September (corresponding with March in England), during which period the equinoctial gales were very violent. Upon the whole, the winter, though considered in this place as very severe, would have been thought mild in England. The dryness of the air is now again beginning to be apparent, and a fine summer is anticipated. Already the thermometer has risen as high as 69°. My present opinion therefore is, that the winter of the Falklands may be considered very mild, but moist, though not rainy, and with little wind. The moisture does not arise from rain or fog, but from the ground; a light soil upon a tenacious sub-soil, numerous springs and rivulets, and the absence of the evaporating winds of summer.

"The progress of cultivation, and consequent drainage of the land, will therefore ameliorate the climate."

The wind blows commonly from the N.W. in summer, S.W. in winter, and seldom long from the eastward in either season. The finest weather in winter is when the wind draws from the West or N.W.; and in summer, when it stands at N.W. or N.E. A North wind almost always brings rain, especially in summer; and East and S.E. winds are constantly accompanied by thick and wet weather. Snow squalls generally come from the S.S.E., South, and S.S.W. Storms are most frequent at the changes of the seasons, and blow commonly from S.S.W. to W.S.W.; but they seldom last above twenty-four hours. (*Geographical Journal,* III. p. 95.)

SOUTH GEORGIA and SANDWICH LAND.—The climate of these islands may be briefly described. Here reigns an everlasting winter. Not a tree or shub is to be seen. The wild rocks raise their lofty summits to the clouds, and the valleys are covered with snow. "Who would have thought (asks Captain Cook, in describing Georgia), that an island of no greater extent than this, situated between the latitude of 54° and 55°, should, in the very height of summer be in a manner wholly covered, many fathoms deep, with frozen snow, but more especially the S.W. coast? The very sides and craggy summits of the lofty mountains were cased with snow and ice; but the quantity which lay in the valleys is incredible; and at the bottom of the bays the coast was terminated by a wall of ice of considerable height. The coast alone receives warmth sufficient to melt the snow, and this only on the N.E. side; for the other, besides being exposed to the cold South winds, is, in a degree, deprived of the sun's rays by the uncommon height of the mountains."

South Shetland.—Of South Shetland the summer may be compared to a dull November in England, and the winter considered as one long starless and desolate night. A perpetual gloom prevails, which the glorious sun seldom or never penetrates, so as to be distinctly seen for many hours together; and as for the stars, they and the moon are scarcely ever visible. Fine days are, "like angels' visits, few and far between." Situated in a high southern latitude, and surrounded by a wide expanse of sea, the atmosphere of South Shetland is loaded with vapour, and everything is damp and humid. The sun's rays act feebly at all times; but in their most powerful form there is nothing to collect or to acknowledge their genial influence; masses of snow and ice repress and overpower their effect. The climate may, however, be considered as healthy.

WINDS AND WEATHER ON THE AFRICAN COAST AND SEA.

WINDS.—In the Atlantic Memoir will be found ample descriptions of the winds, &c., and to that work, therefore, the reader is referred. But for the **Variable** Winds, near the African Coast, the following observations by **Captain Midgley** will be found of great service:—

"I have generally found the limits of the N.E. and S.E. trades accurately described in the Table published in the Memoir of the Atlantic Ocean; and add my humble testimony to the accuracy of the remarks on the African Currents by the late learned and respected Major Rennell. The third section of the Observations on Currents, in the eighth edition of the Memoir, p. 178, should be carefully studied *and acted upon* by every prudent mariner bound to the Bights of Benin or Biafra, or indeed to any part of the Windward Coast; it is an accurate and valuable account of the Guinea current, and may be considered as an unerring monitor, which warns the mariner against its treacherous influence; for when this current runs with its greatest strength, the weather is so wet and squally, that observations cannot often be had, sometimes not for days together.

"I will here offer a few remarks on the general variable winds and weather which prevail between the parallels of 4° and 10° North, and the meridians of 18° and 25° West, or between the N.E. and S.E. trade winds.

"The winds generally incline from the southward, between the trades, and few vessels pass from one trade wind to the other without meeting with very unpleasant weather, in the shape of calms, light baffling winds, squalls, and rain, particularly when the sun is much to the northward.

"In June, July, and August, heavy squalls seem to prevail from the S.W., with a great deal of rain, and the wind often blows hard from this quarter for several hours together, and then falls calm, leaving a heavy and confused short sea, which cause a vessel to labour and strain more than she would do in a gale of wind.

"When the sun is far to the southward, the weather is comparatively fine, with light southerly and S.E. winds, occasionally, however, interrupted by squalls and rain; and the calms are of shorter duration, owing, probably, to the limited breadth of the space between the trade winds at this season.

"In this part of the ocean, when much lightning is seen in a heavy dense cloud, in any quarter of the compass, the wind may be expected to come out suddenly from that quarter, especially if there is any rain, even though the wind may be blowing at the same time with moderate *force from an opposite* quarter.

"Forked or chain lightning is the almost sure forerunner of a heavy squall; it is a monitor whose warning should not be neglected.*

"Whenever there is much lightning, and the wind is unsteady and baffling about, prepare for a change. A heavy dense cloud, having a squally appearance, may rise and pass slowly over the vessel directly to leeward, with perhaps little or no increase of wind; and when the danger may be supposed over, the vessel is suddenly taken aback with a smart squall. This, I presume, arises from the cloud which has just gone over the ship, being opposed in its progress to leeward by a stronger current of air from the opposite quarter. On this account, when clouds are in motion from opposite quarters of the compass, a better look-out, if possible, should be kept to leeward than to windward.

"Keeping a good look-out upon the surface of the water is an excellent method of judging of the force of wind in an approaching squall; but on account of the heavy rain which invariably accompanies the squalls alluded to, very little sound judgment can be exercised with respect to their strength: they are generally, however, tolerably heavy, and require sail to be considerably reduced.

"In June, July, and August, the weather is very wet and squally. Sometimes dense masses of clouds are seen in rapid motion from the S.E., southward, and S.W. quarters of the horizon: these clouds have a bulky and confused appearance, as if tumbling or rolling over each other; are of a dirty, dark drab colour, with ragged edges, and inky-looking small clouds flying about the edges of them. In their approach towards the zenith they gradually appear to unite and form the apex of an angle, and thus united blow with incredible violence from the S.W. quarter (veering about two or three points or more) for upwards of two hours, during which time the rain descends in torrents, perhaps accompanied by a waterspout or whirlwind.

"Ships should be well prepared for these dangerous visitors; for they come with a similar violence to the arched white squall of the West Indies. I have experienced two squalls of the above description (both in the month of July), and in one of them lost a good fore-topsail, after the reef tackles, &c., were hauled out snug, and the ship had been for some time running directly before the wind. Upon both occasions my barometer fell three-tenths of an inch very suddenly, which enabled me to take in sail in time; for the squalls did not look particularly alarming until about eight or ten minutes before they reached the ship.

"To the inexperienced in this part of the ocean, I would beg to remark, that *much* sheet lightning is always suspicious, and forked or chain lightning universally so; and the latter is, in some degree, indicative of a change, as well as of an increase of wind.

"After the wind has blown steadily, with fine weather for a few hours, and it then begins to be variable, and fly suddenly about, squalls and rain may be expected.

"The moon has great influence on the weather; for it is mostly squally and unsettled, with much rain, about the full and change.

"I perfectly agree with Captain Cheveley, that the month of July is perhaps the worst in the year for making southing between the trades. I have made two homeward passages in July between the meridians of 22° and 26° West, and met upon each occasion with the same weather as described by that gentleman; namely, strong S.W. winds, hard squalls, and torrents of rain, with a heavy short sea, and northerly currents."

SEASONS.—On the WINDWARD COAST, from January until May, the weather is commonly fair and clear, with cooling breezes and gentle westerly winds. But, about the middle of May, the South and south-east winds begin, accompanied, not only with hurricanes and stormy gusts, but also with thunder, lightning, and great rains, which vary, more or less, until January, as shown in the following description.

The Baron Roussin says that on the whole extent of the African coast there are but two seasons; namely, the RAINY and DRY SEASONS. The division of the two is connected with the periods when the sun crosses from one hemisphere to the other, and is modified as he advances to, or recedes from, the Equator.

The RAINY SEASON.—The rainy season commences at each place on the coast to the northward of the Equator, at the time when the sun passes the zenith of that place state of the air, creating an apparent regeneration of the animal as well as of the vegetable world."[*]

---

* In those parts of the North Atlantic Ocean which are not in the general influence of the *trades, I have very frequently* remarked that lightning is indicative of a change of wind.

Between *Cape Mount and Cape Mesurado*, as well as upon the coast westward, between *Cape Mount* and *Cape St. Anne*, the rains begin with May, and continue till October, accompanied with great thunder and lightning, and furious gusts of wind from the northwestward. During this time the sea sets so hard to the N.E. along the coast, and with such mountainous billows, that it is impossible to approach the shore; so that ships which, between July and September, happen to fall below Cape Mount, cannot, without great difficulty, get about to the South.

On the GOLD COAST, between the rivers Assinee and Volta, the seasons are very nearly the same as on the Grain Coast. In January the wind begins to blow hard from the S.W. quarter, and becomes stronger in February, bringing with it sometimes rain, and sometimes a hurricane. About the end of March and beginning of April those heavy tempests, commonly called the *tornadoes*, arise, accompanied with a deluge of rain, thunder, lightning, and sometimes with earthquakes; these continue to the end of May, and are announced by the darkness of the sky in the S.E.

During the rainy season, that is, in May and July, few or no land winds are felt; but, from the sea, it blows out of the S.W. and W.S.W., making a very great swell, which continues, even in August, though the rains begin to cease in that month.

The weather on the Gold Coast grows fair in September, and the air clear, with gentle South winds; and this continues till January, the hottest days being in December.[†]

To the southward of the Equator the rains on the coast begin to fall in October, and continue till January, but subject to the same variations as North of the Equator; the seasons being governed by the earth's place on the ecliptic.

A young officer, in describing the country near the River Bonny, speaks of the climate thus:—" Here the sun acts not only upon the body, but upon the mind, also, its influence is great; and none but those who have not experienced it can imagine the pleasure of seeing the sun, after its burning course, sink into the cool bed of the ocean.

" The burning rays of this part of Africa are possessed of so much power, that braving them in the day time may be considered as an act of insanity; for if a *coup de soleil* does not quickly deprive you of reason enough to know anything about it, you will soon discover that a second walk in the sunshine may save you the necessity of looking after your own affairs, and trouble your next of kin to take charge of your body and estate. All nature seems, in these caloric regions, to feel and look parched and feverish, and I firmly believe that every cat, dog, mouse, tree, shrub, and butterfly—in fact, every member of the animal and vegetable kingdom, looks with as much pleasure upon the daily decrease of the hot luminary as they hail with delight the cool refreshing dews of night, with the cold comfortable looking moon shining, with its round unmeaning face upon the thirsty earth. An Englishman cannot understand a tropical sun; the dog-days of our temperate isle would be refreshing moments to the toasting, stewing, enervating hours of an African purgatory: frequently no breath of air sweeps over the waters to cool your parched skin, or else it comes " like blasts from hell," and you inhale air that almost burns the lungs, so hot and arid is it. With night comes the tempting, but too fatal dews, and a refreshing breeze.

" The morrow comes when they are not for thee."

At the ISLAND of ST. THOMAS, which is situated nearly on the Equator, in lon. 6¼° E., the climate is materially different from that of the Gold Coast; and upon this part of the subject the following remarks of Captain Sabine will be found interesting:—" The occasional advance of the cold water of the *Equatorial Current* to the Island of St. Thomas may assist in explaining an apparent peculiarity in the climate of that island, when compared with the climate of the coast of Western Africa generally. At all the

---

[*] These remarks are abstracted from a very useful volume, entitled, " *The Merchant's and Mariner's African Guide*," by Lieutenant Edward Bold, R.N., 8vo., London, 1822, and which minutely explains the various systems of traffic which have prevailed on the different coasts.

[†] For a description of the HARMATTAN, or temporary easterly wind, which at times prevails in *December, January*, and *February*, see " *Memoir on the Atlantic Ocean*," Section II.

British possessions from the Gambia, in lat. 13° N., to the forts on the Gold Coast, June, July, and August are accounted the unhealthy months; whilst at St. Thomas's, on the contrary, they are the most healthy in the year to Europeans, although they are not so to the negroes, who suffer much from colds and rheumatisms during their continuance. It has been shown that the water of the Equatorial Currents is from 10° to 12° colder than that of the Gulf of Guinea, and that its northern border, which, at other seasons, passes the meridian of St. Thomas at a distance of from 120 to 180 miles South of its southern extremity, was found in June in contact, or very nearly so, with the island itself; and it is not improbable, from the consideration of the causes which occasion its advance toward the Equator when the sun is in its northern signs, that in July it may extend so far as even to include the whole Island of St. Thomas with its limits.

"The temperature of the air is known to be immediately dependant on that of the surface water of the sea, and to be influenced nearly to the full extent of any alteration that may take place therein. In crossing the Bight of Biafra, from Cape Formosa to St. Thomas's, the air over the surface of the Guinea Current, observed in the shade and to windward, at sunrise, noon, and sunset, averaged 81½°, the extremes being 79° and 83½°; whilst in the passage from the River Gaboon to Ascension, over the Equatorial Current, the air averaged only 74°, the extremes being from 73½° to 74½°, a part of the passage being, moreover, on the very edge of the two currents, and within sight of St. Thomas's. The vicinity of the Equatorial Current, therefore, when the sun is in the northern signs, cannot fail materially to influence the temperature of the island (particularly as the wind is always from the South), and thus to affect its climate. Situated on the Equator, St. Thomas has naturally two cold seasons, or winters, in the year, the sun being equally distant in June and in December; but in June, July, and August, is superadded the influence of the surface water of the ocean, several degrees colder than in November, December, and January; rendering the months of June, July, and August, pre-eminently the winter of St. Thomas's; in which the natives complain of colds and rheumatism, and the health of Europeans is less affected than at other seasons, because the climate is then less dissimilar than usual to their own.

"The comparative unhealthiness of Prince's Island to that of St. Thomas's, and of both to Anno Bon, as the residence of Europeans, has been frequently and particularly noticed by Portuguese authorities, and is universally recognised at Prince's Island and at St. Thomas's. It may be a sufficient explanation to remark, that Anno Bon is always surrounded by the Equatorial Current; Prince's always by the Guinea Current; and that the position of St. Thomas's is intermediate, and its climate is occasionally influenced by both. In tropical climates a very few degrees of temperature constitute an essential difference in the feelings of the natives, and in the health of Europeans."

From the circumstances above explained, vessels navigating on the Windward and Gold Coasts will, of course, be accelerated or retarded, according to the season. An able and competent judge of the subject has said, "*During the period of the year when land breezes alternate with those of the sea*, the best mode of beating a ship to windward is to get under way as soon as the wind blows steadily from the land, hugging the shore on board as near as may be prudent; for by that means every advantage is derived from it that can be expected. Soon after daylight this wind veers to the West, and lays the ship's head off shore; by eleven a.m. the sea breeze will have acquired its strength and true direction, at which time, also, the vessel will have made a good offing. Tack and stand in-shore, anchoring when in 8 fathoms of water, where it will be proper to wait for the land wind. By adopting this method, a vessel is placed in the best possible situation for taking early advantage of the breeze from the shore; whereas if she were kept under way during the night, the probability is that she would lose all the ground she had gained the preceding day, independently of being placed where the land breeze might not reach her.

"*During the rains*, when the sea breeze blows both in the day and night, and at a few leagues from the shore from very near the South point of the compass, stand off shore for twenty-four hours, when the wind will mostly be found to blow at S.S.W. or S. by W., and often at the South; with the larboard tack on board the vessel will lie up West clean full, and the variation being nearly two points southerly, she will not only make good her course, but southing also.

"As the current at this season of the year sets strongly to the eastward, it will be prudent to allow 36 miles *in twenty-four hours* for its mean velocity; otherwise, in bearing up and making the land, the ship will be found to leeward of her port of destination. This is an error many have fallen into. Perhaps it would be better to allow even 48 miles, because it is easy to run a few leagues to leeward, should the vessel prove to windward of the place to which she is bound."

The SEASONS of the country forming the BIGHT of BIAFRA have been described by Lieutenant Bold nearly as follow:—Although nature here is apparently in a ceaseless state of verdant vegetation, the seasons vary as sensibly as in more temperate regions, contributing to the decay of old and regeneration of new fruits and plants. The spring commences about November, and the hot months of summer continue until May, during which period the weather is clear and fine, but excessively hot, with occasional tornadoes. From the middle of June the rains gradually increase, and continue in all July and August, descending during the latter in torrents. This period may be considered as the winter, and during it the inhabitants are afflicted with colds, fluxes, fevers, &c. In September, October, and November, the country is entirely enveloped in exhalations, which the natives term the *Smokes*, and which are exceedingly injurious to the European constitution. In this season, fumigations of tobacco through the vessel, with smoking, have been found efficacious in repelling the pernicious effects of the vapour.

It is advisable for those who intend to remain for a season in the *River del Rey* to have a housing over the vessel, in order to preserve the health of the crew, as well as the ship's decks and sides, which will otherwise be materially damaged, by exposure to the sun during so long a period.

About the island of ANNO BON the wind blows with a moderate force, and little variation, from the South and S.W. quarter throughout the year, so that, as ships lie there, under shelter of the land, they ride at anchor exceedingly easy and safe, and the navigator has little or no danger to apprehend from wind and weather, excepting about the months of March and September, when tornadoes, or strong gusts of wind from the eastward, prevail at times over the general sea breeze, and blow direct into the anchorage; but fortunately, the previous gloominess of the horizon to the eastward, and the heavy thunder and lightning by which they are preceded, always give timely notice to those who have not the ground-tackling requisite for riding them out to get under sail, and withstand their fury in the offing.

In point of salubrity to European visitants this island could scarcely fail of proving superior to any of our settlements on the western coast of Africa, and it is much better suited to the constitution of Europeans than the climate of any other African island situated within the tropics, and at a shorter distance from the continent. It is situated far out of the reach of those pestilential vapours and excessive heavy dews and rains which are so prevalent and so fatal to Europeans, on the coast of the continent, and it does not contain any marshy land nor stagnant waters within its shores.

SEASONS, &c. OF CONGO.—Lieutenant Bold has stated that the seasons, in the vicinity of Congo, are considerably later than those to the northward. *Massanga*, or the season of rains, commences in October, and terminates in January; then *Nearu*, or the harvest months, succeed, and continue until March or April. *Quitomba*, or the tornado season, takes place in May and June; and is followed by *Quibiso*, the dry season, which continues until September, when the river rises considerably.

The WINDS from September to March are most commonly between the South and West, with a rapid current to the North; but from March to the dry season from the S.S.E., at which period the current frequently runs to the S.W. The sea breeze generally sets in toward noon; and it may be observed, that vessels bound along this coast to the southward should invariably beat to seaward, out of the strength of the current, excepting when it should be found weatherly, and at those hours the land winds prevail, which they may stand in-shore to take advantage of.

SEASONS, &c., at the CAPE OF GOOD HOPE.—The division of the year at the Cape may be said to consist of four parts, as in Europe; thus dividing it, the *Spring* which commences at the beginning of September, and continues to the beginning of December, is indisputably the most agreeable season. The *Summer*, from December to March, is sultry, and would be intolerable, if the heat were not mitigated by the winds which blow from the Southern Ocean. The *Autumn*, from March to June, is distinguished by a variety of weather, though generally pleasant toward the end; and the *Winter*, from June to September, is usually cold, rainy, and stormy.

The seasons are also divided into dry and wet; the latter from September to March.

reatest heat is in January and February, when the thermometer sometimes rises °. In the stormy or winter months, June, July, and August, it falls at times

the summit of the Table Mountain the temperature of the air is considerably lower clear weather of winter than in Cape Town; and in summer the difference is still r, when the head of the mountain is enveloped in the fleecy cloud called the *Table* The approach of winter is generally indicated by the subsidence of the winds e disappearance of the cloud. These tokens are succeeded by heavy dews, thick nd cold north-westerly winds, accompanied by violent storms of thunder, lightning, in. At the expiration of three days the atmosphere begins to brighten, and then untains on the continent appear with their summits covered with snow.

climate of the Cape appears to be as healthy as any in the world, and no partiliseases belong to it. Here, as everywhere else, coughs are troublesome in the , and gout is common among the farmers, a circumstance easily accounted for. eople, in general, appear ruddy and healthy. In six months of the year 1829 the rature of the air and sea-water were as follow:—In July, air 58°, water 57°; t, air 54°, water the same; September, air 60°, water 56°; October, air 59°, water November, air 62°, water 57°; December, air 68°, water 58°.

prevailing winds here are from S.E. and N.W. Others seldom last longer than a urs. The East and N.E. are less than any. The North and N.W. commonly hurricanes, and bring on foul weather. The S.E. winds blow, more or less, in all the months of the year, but chiefly in the fair weather season, from October l; then you generally have, in the mornings, regular sea breezes from S.W. and which last till noon, and sometimes longer; they are followed by a S.E. and wind, coming off the land; this mostly blows fresh the remaining part of the day, quently all night, when the sea breeze comes off again. In the months of May, July, and August, the West and S.W. winds blow strong, being frequently accom. with fogs and cloudy weather, but they are soon over. Sometimes violent N.W. prevail for several days together, and by fits in the other months; the sky at this constantly clouded, and they generally end in rain.

Webster, in his narrative of the voyage of the *Chanticleer*, has observed that "On tern side of the Cape of Good Hope we find the sea breezes strong, and blowing upon the coast; there the sea breeze coincides, in direction, with the trade wind. roaching the southern line of the Cape, the tendency of the wind to blow from E., or a cool quarter, still continues, as the causes remain the same; but on g the Cape to the westward the wind is found to veer gradually to the southnd become S.W., because the S.E. is no longer the cool quarter to that part of st; and to some distance off shore, perhaps 100 miles or more, the S.E. trade blow, for the cool quarter there is the S.W. Here the wind is light. But as we f shore, the S.E. wind begins to prevail, and in the open ocean is uninterrupted. western coast of Africa, generally within 100 or 200 miles from the coast, the cool n the ocean rushes in, and counteracts the trade wind. It is, therefore, obvious e western coasts of a continent within the tropics have different winds from the . The eastern coast of South America has the S.E. winds blowing strong as far nte Video in the summer time; but the western coasts do not present the same of heated surface as those of Africa, on account of the chain of mountains which parallel to the coast, and in consequence there are not westerly but southerly n that coast."

II.—OF THE TIDES.

FOLLOWING DESCRIPTION of the Tides commences with the northern Coast of from East to West; it thence proceeds with the eastern coast of the same, from o South, and down the Patagonian Coast, &c., to Cape Horn, and next with the f Africa, down to the territory of Good Hope.

THERN COAST OF BRASIL.—We are, as yet, but imperfectly acquainted e tides on this coast, but the following remarks will serve to show that the time of , or high water, is progressively later from East to West. At the entrance of the pe or Aracati River, near the meridian of 38° W., the time of high water, on the change days, *is about* 5^h. *Spring* tides here rise 8, and neaps 4, feet. The highest tide is two days after the full and change. The flood stream outside sets constantly to the N.W. along shore, but is seldom stronger than two thirds of a mile in an hour.

In the *Bay of Seara*, and coast next westward, very little tide is perceptible; but between the *River Perguizas* and *St. Anna's Isle*, near Maranham, there is a regular flow, setting directly on the coast, and which runs an hour longer than the ebb. It has been conjectured that there may be here an under-tow, always running to the westward. In the *Bahia* or *River of St. Jozé*, on the East of Maranham Island, the tide sets with great strength: the flood from E.S.E., the ebb from W.N.W. High water at about 6ʰ P.M.

From off the Isle of Santa Anna the flood sets to the S.W. into Maranham Bay; its rate in the offing is commonly more than half a mile in the hour; but, on advancing, its strength increases. In the harbour of Maranham the tide makes at least half an hour before it does outside. High water at about 6ʰ 20′.

At the Island of St. Joaõ, or *St. John*, the tide runs very strongly N.E. and S.W. High water at about 6ʰ 24′ P.M.

Navigators leaving Maranham for the coast to the westward have been advised to take three or four days after the full and change of the moon for the time of starting, as the spring tide, at times, previously runs at the rate of 4 miles an hour.

Between St. Joaõ and Salinas (lon. 47° 15′) Captain the Hon. W. Wellesley, in H.M.S. *Sapphire*, found a strong easterly and south-easterly stream running off the shore. Whenever the *Sapphire* was at anchor hereabout, the flood was found to set S.E., and the ebb East. The pilots say that this is always the case from December to May or June, owing to the heavy rains. The *Pickle* schooner, ignorant of this particular, was set back from Atasia to the Bay of Turivazo, a distance, eastward, of nearly 40 leagues, and was unable for some days to make head against it. A French brig of war was likewise set in the same direction.

Near Salinas, during the rainy season, from September to May, the tide along the coast has been found constantly setting from S.E. to East. Between this and the *Rio Para* the tides run very strong, and are very uncertain in their direction, owing to the numerous small rivers and banks in the vicinity, and more especially to the streams of the great River Maranon, which affect them on the West. High water at Salinas about 8ʰ.

M. Tardy de Montravel says that the tides on all the coast between Salinas and Para are felt at 20 miles off; near the land where they are strongest the flood runs into the bays, that is, to S.S.W., at the rate of 1¼ and 2 miles; the ebb to E.N.E. at three-quarters to 1 mile an hour.

On the *Braganza Bank*, off Point Tigioca, the time of high water appears to be from 10ʰ to 10ʰ 30′. At Para it flows at 12ʰ 5′ p.m., and vessels carry a regular tide up the river. In the port the tide runs with great strength, and without the river, to the N.W., the ebb stream runs strongly until it is blended with those from the Maranon, which set more to the North.

EASTERN COAST OF BRASIL.—We now revert to the *Eastern Coast of Brasil*, from Cape St. Roque southward, and find that at Pernambuco and Bahia, or St. Salvador, the time of high water is 4ʰ 45′, and rise from 6 to 8 feet. In the harbour or port of Cape Frio the time is 1ʰ 40′, and the rise only 4 feet. In the channel, within the Island of St. Sebastian, the time has been given as 2ʰ 30′, but the rise and fall here is scarcely perceptible, at least not regularly so, and the current sets according to the wind. Hence the tide at Rio Janeiro is so little, that it seems to have almost escaped notice; but Captain Owen gives it as 2ʰ 40′, and rise 4 feet.

Within the Harbour of St. CATHARINE the ebb and flood are very unsettled, and seem to depend almost entirely on the wind. The flood sets in from the North, the ebb from the South; and as the wind is almost always from the sea, the ebb, with a fresh northerly wind, is scarcely apparent, and seldom lasts more than two or three hours. The time of high water, at new and full moon, has been given at 2ʰ 30′, and the rise 6 feet.

In the RIVER PLATA, likewise, there do not appear to be regular tides, but currents, as uncertain in their duration as they are irregular in their rate and direction. In fine settled weather, with moderate winds, a rise of 5 or 6 feet has however been found here.

PATAGONIA, &c.—Off the Patagonian Coast the flood tide sets to the northward, parallel with the coast. Near Virgin's Cape (lat. 52° 18′) the northerly tide ceases at about four hours before the moon passes the meridian; in the Gallegos River it is high water, on the full and change, at 8^{h} $50'$, and the rise is 40 feet; at Cape Fairweather, 9^{h}, rise 28 feet; at Coy Inlet between 9^{h} and 10^{h}; at Port Santa Cruz, about 10^{h} $15'$, but in the offing two hours later; Anchorage off Port Julian, 10^{h} $34'$, rise 38 feet; at Sea-Bear Bay, 12^{h} $45'$, rise 20 feet; Port Desire, 12^{h} $10'$, rise 18¼ feet; Port St. Elena, 4^{h} p.m., rise 17 feet. In the offing of Port Desire the tides are three and a half or four hours later than they are in-shore, which is probably owing to the eddy tide setting out of St. George's Bay.

STRAIT OF LE MAIRE, &c.—On the S.W. coast of Tierra del Fuego, westward of the Strait of Le Maire, the tide is felt strongly, causing races and eddies near the projecting points. In the offing the current or tide sets toward the Strait from 1 to 3 miles an hour, when the water is rising on the shore, and the wind westerly. While the water is falling it runs with less strength, and with an easterly wind is not felt at all.

In the Strait of Le Maire it is high water at 5^{h}, but the flood tide continues to run northward until about 6^{h} p.m. on the day of new moon. The flood tide is much stronger than the ebb along all this coast, and it sets from the westward; but northward of Staten Island and the Strait of Le Maire the flood tide runs north-westward.

Although 5^{h} and 6^{h} are the average times, the tides vary much; being sometimes nearly an hour earlier, and sometimes as much later, on the day of full or new moon.—*Captain FitzRoy.*

They will assist a vessel materially in her passage, if taken at the proper time. Off Cape Diego, the N.W. point of the Strait, when the tide opposes the wind and swell, there is, however, a heavy, and for small vessels, dangerous race of tide; and eddies may, at times, be seen here in every direction.

In Good Success Bay it is high water at 4^{h}, and the rise is 6 or 8 feet, according to the wind.

From Cape St. Diego, to the northward, the tide sets North and West along the shore, *from 1 to 3* miles; the ebb in a contrary direction, but not so strongly. In the Strait *the flood tide* runs northward from 2 to 4 miles in the hour, near the Cape, and from 1 to 3 in mid-channel, more or less, according to the strength and direction of the wind. The ebb sets to the southward about 1 mile an hour.

STATEN ISLAND.—Along the North and South sides of Staten Island the flood tide sets from East to West. It is high water, on the full and change, at the anchorage within the New Year's Isles, as well as on the East side of Strait Le Maire, at 5^{h}. The current is very strong, running from 4 to 6 knots. Off Cape St. John is a tide race, which extends to some distance off the point.

OFF CAPE HORN and the coast to the westward the stream is strong and irregular. It generally sets eastward, and sometimes 2 miles an hour, as shown hereafter.

FALKLAND ISLANDS.—Concerning these islands Captain FitzRoy says, "The tides differ much as to strength and direction in different parts of the Archipelago, but the times of sizygial high water only vary from 5^{h} to 8^{h}, and the rise of tide is almost similar everywhere, about 4 feet at neap, and 8 feet at spring tides. The principal swell of the ocean, which causes the tidal streams from these islands, comes from the S.E. Scarcely any stream is perceptible on the S.E. coast of East Falkland; but along the North, South, and West shores it increases in strength, until among the Jason Islands it runs 6 miles an hour, causing heavy and dangerous races. Off Berkeley Sound, across the entrance, and near Cape Carysfort, the tide runs about 2 knots at its greatest strength, and thence westward it increases gradually. Into Falkland Sound the tide flows from both openings, and meets near the Swan Islands; showing, I apprehend, that the principal wave or swell impinges upon the coast considerably eastward of South.

"The tidal currents are stronger along the northern shores of the Archipelago than they are along the South coasts, and the stream of flood is stronger than the ebb. At Port William, the easternmost harbour, the time of high water at full moon is 5^{h}, and thence westward the times increase gradually to 8^{h} $30'$ at New Island, which is nearly the westernmost of the group.

"Generally *speaking, the sea is much* deeper near the southern and western shores, than it is near those of the North; and to those local differences I attribute the varyin velocity of the minor tide streams." *

At Port Egmont, on the North side of the Great Island, it is high water, on the fu and change, at 7^h 10′, and the rise is 9 feet; North entrance of Falkland Sound, 6^h 30′ Tamer Harbour, 7^h; Pebble Sound, 8^h 30′; Saunders' Island, 7^h 30′; Jasons' Isles, 8^h Swan Islands, 8^h 30′; Port Stephens, 8^h; Port Albemarle, 7^h 45′; Berkeley Sound, 5 rise 7 feet; Isle Georgia, time uncertain, rise 4 or 5 feet.

AFRICAN COAST.—Along the coast of Guinea, at sea, generally, the vertical ris is about 4 feet; and in the mouths of rivers 5, 6, and 7 feet. In the river Shebar, o Sherbro River, it is high water at 8^h, and the rise is 8 feet. At Cape Coast the time i given at 5^h 30′, rise 6 to 7 feet; at Lagos, 4^h, rise 6 feet; Benin River, time 4^h 15′, ris 8 feet; New Calabar River and Bonny River, time 5^h, rise 9 feet; Cape St. John an entrance of the River Gaboon, time 5^h, and rise 7 feet. Off the Calabar and Bonn Rivers the tide flows in the stream or offing till 6^h.

In the Bay of St. Anna de Chaves, Island of St. Thomas, it flows at 5^h 30′; at S Paulo de Loando, 4^h 30′, rise 6 feet; in the mouth of the River Coanza, more to th South, the rise is 8 feet.

In Walvisch Bay the time is 1^h 54′ or 2^h, rise 6 feet; in Table Bay, 2^h 25′, rise feet; in False Bay, 3^h 30′, rise 4 or 5 feet; at Knysna, 3^h 15′, rise 7 feet; Algoa Bay 3^h 20′, rise 6 feet.

III.—OF THE CURRENTS.

The phenomena of Ocean Currents present to our view one of the most might agents in the distribution of climate and other effects in operation on our globe. Thei nature, however, is not generally well understood, the subject having remained till latel nearly stationary since the days of Major Rennell, with whom it originated. The Currents of the North Atlantic have naturally received the greatest attention, and severa difficulties were encountered in forming an entire system upon the data collected in tha part of the ocean. However, by extending the investigation to other areas, and especially to the Pacific, which till recently has had but little attention, we are enabled t supply some deficiencies in this.

In our recent "Directory for the Pacific Ocean" (1851, part II. pp. 1238, *et seq.*), we have described the tropical currents of that great ocean, and demonstrated that th great westerly drift becomes broken up, and enters the Oriental Archipelago through th numerous channels dividing the islands, and thus becomes neutralized as to its westwar set. We may, therefore, suppose that the open spaces in this archipelago will have a higher temperature than the rest of the ocean, and also be the initial point of the grea current systems which circulate around the Indian and Atlantic Oceans.

A continuous current may thus be traced from the Indian Archipelago, between Timor, &c., and Australia, across the Indian Ocean, and nearly surrounding the globe, across the Atlantic to the shores of Britain, and into the Arctic Sea.

This mighty circulation, which is described in the Journal of the Royal Geographical Society, Vol. XXIII. 1853, is similar to what is going on in the Pacific, and their combined effects present one of the grandest features of nature, and the importance of which cannot be too greatly appreciated by the mariner.†

A very brief notice of the general system may be here given, to elucidate the subsequent details. The revolution of the earth and the solar heat causes the phenomena of the trade winds within the tropics. These blow from N.E. and S.E., meeting near, but *not on*, the Equator, a fact due to the unequal distribution of land and water in the two hemispheres. The line of junction is between lats. 4° and 10° N., as shown in a table in the Atlantic Memoir, 1853, p. 119; and this belt of calms is the well-known obstacle to ships crossing it in the Atlantic and in the Pacific N. or S. of the tropics, or of lat. 30° N. or S. The winds blow from the westward, with almost as much regularity as those from the eastward within the tropics, more especially beyond the influence of the land.

---

* Voyages of the Adventure and Beagle, vol. II. p. 241.

† *See Journal of* the Society of Arts, May 20, 1853, pp. 301—304.

To the direction of the wind that of the *surface* current (with which the sailor has only to deal) is owing. And in each ocean it will be found that the waters circulate around it on the parallel of 30°, flowing westward between this and the Equator, and eastward between it and the poles; and towards the Equator on the eastern sides of each ocean, and from it on the western.

Thus the circulation around the basin of the Ethiopic Ocean is first to the westward, around the Cape of Good Hope (the Agulhas Current); then northward along the West Coast of Africa (the South African Current), up to the Equator; thence westward across the ocean (the Equatorial Current), a portion passing along the North Coast of Brasil, into the Mexican Sea, and emerging thence in the well known Gulf Stream; and the other branch passing southward down the coast of Brasil (the Brasilian Current), whence turning *to* the eastward it re-enters the Indian Ocean, South of the Agulhas Current, as the Southern Connecting Current. These separate branches will be described, and will be found analogous to those existing in other oceans.

The CURRENTS OF THE ATLANTIC OCEAN, northward of the Equator, in connexion with those to the southward of it, have been explained in the *Memoir, &c.*, on the Atlantic Ocean.

The PREVALENT CURRENTS of the ETHIOPIC OCEAN may be briefly enumerated.[*] That remarkable feature of the ocean, commonly called the AGULHAS (Lagullas) CURRENT, which is generated by the great drifts of the Indian Ocean, both eastward and westward of Madagascar, flows westward, and sets over the edge of the great Bank of Agulhas; whence, passing the meridian of the Cape of Good Hope, it spreads both to the North and West, and a branch or off-set rounds partially to the S.W., South, S.E., and East, as shown hereafter.

The SOUTH AFRICAN CURRENT, called by Major Rennell the *South Atlantic Current*, is a continuation, northward and north-westward, of the Agulhas Current; it sets in the direction of the African coast, and nearly parallel thereto, until it has passed the latitude of the River of Congo (about 6° S.), beyond which it has a decided north-westerly course, until it blends and unites with the *Equatorial Current*, between the parallels of 1° and 5° South; and this united stream sets to the West, W.N.W., and N.N.W. (with a great off-set or drift to the North, N.N.E., &c., during the African S.W. monsoon), as described in our former work.

The central part of the ocean, North of the tropic of Capricorn, is under the immediate influence of the S.E. trade wind, which impels its surface waters to the westward. This immense drift sometimes reaches nearly home to the Brasilian shores; but on approaching those shores it appears more frequently to form a *stream* current, setting in a counter-direction along shore to the *southward*, and which is said to have been traced nearly from Pernambuco to Tierra del Fuego; but circumstances prove that it is variable, and always modified by the prevailing winds.

From the River Plata there is commonly a great outfall of fresh water, which has been traced many leagues to the eastward, and which is lost in the variable currents found between the *westerly* or central drift, on the North, and a wide *easterly* current, commonly prevailing between the parallels of 30° and 35° to 40° S.[†] The last, denominated the SOUTHERN CONNECTING CURRENT, greatly facilitates the passage of ships bound to Australia and to ports of the Indian Ocean.

On the parallels South of the Connecting Current the great drift of the Antarctic waters, when not disturbed by local winds, appears to be in a north-easterly or E.N.E. direction. We find it thus at a certain distance from the S.E. coasts of Tierra del Fuego and of the Falkland Islands, a consequence of the more prevalent winds, which are westerly. As, in the Arctic or Northern Icy Ocean the great flux of water is from N.E., so in the Antarctic it is from the S.W. or W.S.W., setting to the N.E. and E.N.E. to the meridian of 60° E., and probably much farther in that direction.

The particular details are as follow, taking the Currents in the order above-mentioned—

---

[*] This explanation will be clearly understood by referring to a chart of the world, exhibiting the currents, and recently published.

[†] "In the parallel of the Rio de la Plata (December, 1823), although 200 miles from land, we were daily carried by the current 39 miles out of our course towards the S.E., so great is the influence of this *mighty river at the distance of* 240 miles from its mouth."—Kotzebue.

1.—THE AGULHAS (IMPROPERLY CALLED LAGULLAS) CURRENT.

This current has been described as a perennial or constant current, which sets into the Atlantic Ocean round the entire southern extremity of Africa, or territory of Good Hope. It varies in its velocity, in different situations and at different periods, from 5 miles to 1 mile an hour. Ships have been frequently carried to the westward, quite round the Cape of Good Hope, even against the strongest N.W. gales, by this current; in such case the sea breaks so short, that is, the waves are so high and close to each other as to occasion much strain upon a vessel, which, when she is deeply laden, is always dangerous, and frequently fatal.

In consideration of the operation of this current, those from the eastward must take care, in the summer months, when the S.E. winds prevail, not to fall to leeward, for it will be very difficult to gain False Bay, if a ship first makes the Cape land when to the westward of it, during a strong S.E. wind. At times, ships with stores from India, and bound into Table Bay, have been obliged to bear away for St. Helena, in consequence of passing the Cape in the night, and being unable to beat against a strong easterly wind and leeward current.

The vicinity of the Cape is notorious as the boundary of very different kinds of weather. To the eastward of it, ships homeward bound have, in general, unsettled cloudy weather with variable winds; but so soon as they have gotten to the westward of the promontory, the weather commonly becomes favourable, with a steady south-easterly wind aiding the current; this may be expected more particularly in the summer season.

The setting of the Current on and off the Bank of Agulhas had been a subject not previously understood, and many asserted that, at different times, this current set in contrary directions in the very same place. *Major Rennell* is the first who, in 1777, explained it in a manner equally ingenious and satisfactory, and he showed that the main stream of the current conforms to the direction of the edges of the bank, and not the shore, as generally imagined. The Major says, "It is universally allowed that the current runs strongest during the winter months, and all the journals I have seen confirm this opinion. It is, no doubt, influenced in some degree by the wind and other causes at all seasons, and the width of the stream may possibly bear a proportion to its velocity.

"In the winter months, when the westerly winds are so common, the passage round the Cape will be the most speedily effected by keeping the ship in the stream of the current, and letting her drive round the Bank. I am aware that most commanders prefer keeping on the Bank, for the purpose of getting soundings, and in expectation of smoother water, and a stronger current than is to be met with farther out; with respect to the latter, which is undoubtedly the prime object, they are disappointed, as they find a help of about 4 or 5 miles per day only between Cape Delgado and Cape Agulhas. All the journals that I have examined tend to establish this fact, of which I had ocular proof during five days that I was on the Bank.

"I am indebted to Captain Waghorn, late of the Ashburnham, for the first hint I received concerning the course of the current round the Bank. He went round it in the *Liverpool* frigate, in 1764, and in five days had a help of about 160 miles between the meridians of Cape Delgado and False Bay.* The alternation of the current from S.W. to N.W., in latitude 37°, was so sudden that it marked the exact time when the ship doubled the point of the Bank."

The particulars of the currents, from later researches, are as follow:—

The two streams of current from the Indian Ocean, the one from the Channel of Mozambique, down the S.E. coast of Africa, and the other from the ocean at large, both drift water running south-westward, join nearly opposite Point Padron, or longitude 26¼ E., and probably near the edge of the Agulhas Bank, about 40 miles from shore.

These streams united, between the meridians of 25° and 29° E., form one stream, of 90 to 100 miles in breadth, which acquires a moderate velocity on the side toward the Agulhas Bank. Near the meridian of 29° it has been found to set, south-westward, more than 4 miles an hour; but more frequently 3½, 3, and 2½.

From the meridian of 25½° the stream gradually turns to the West; its main body continuing to the border of the Bank, which extends 50 leagues, in a direction W.S.W. ½ W., whence it changes to S.S.W. The main body, or central part of the stream, appears to strike on the Bank, nearly W. by S., about latitude 35½°, and longitude 23°, and is immediately deflected southward to S.W. by W., and, by the time it arrives on the parallel of 36°, to S.W. It becomes S.S.W. before it reaches 37°. In 37½° it sets due South, on the meridian of 22° E.

---

* Cape Delgado or Seal Cape is in about 23° 20′ E.

Although the main body of the stream is turned aside, on coming upon the Bank, from its general western course to one more southerly, a large portion of it comes over the edge of the Bank, in some parts to 20 or more miles within the border, in 100 to 120 fathoms of water, and with a velocity of about 45 miles in the twenty-four hours.

The check given to the current by the eastern edge of the Bank does not turn it aside at once, but it acquires the new direction by degrees, and a considerable portion of the main stream passes over, and to some distance within, the edge of the Bank; more particularly going southward, where the water on the Bank becomes deeper.

From what is known, it has been concluded that the Bank, with a depth of about 100 fathoms, actually turns the stream as the stray current advances; when it must be inferred that its main body is, at least, 100 fathoms in depth. No other reason appears why it does not pass directly across the Bank, in the line of a slow westerly current, where the shallowest depths are from 40 to 50 fathoms.

The preceding description relates only to the main body of the stream; for it must be observed, that a large portion of it is diverted to the West and S.W., spreading in a fan-like shape, over the Bank, in all directions between West and S.W. by S.; and, having crossed over to the western border, it changes its direction toward the N.W., but with a small degree of velocity compared with that of the main stream.

That part of the current which proceeds westward over the Bank, between the parallels of 34¾° and 35¾°, appears to be formed, generally, of the northern part or border of the main stream, which, by passing to the North of the angle where the Bank turns suddenly to the S.S.W., avoids that opposing drift which turns the rest to the southward, and passes onward, on its original course, between the W. by S. and W.S.W.; spreading itself to nearly a degree of latitude in breadth, but with a reduction of about three-quarters of its original velocity. This, therefore, appears to be the cause of the westerly course of the current across the northern part of the Bank; while, on the southern part, it is generally south-westerly, as being formed of offsets from the main body of the current in its passage to the S.W. and this part is generally stronger than the northern part.

That portion of the stream which passes round the Bank, and over the deep water at its southern extremity, and finally passes along and over its western edge toward the N.W., although stronger than that which passes across the Bank, bears no comparison, in velocity, to what passes down the eastern side; being, indeed, no very large proportion of the great Agulhas Stream.

When the water of this exterior current is united with the waters which pass westward across the Bank, which takes place opposite the Cape of Good Hope, they collectively form a wide stream, running to the N.W., at the rate of 1 or 1½ miles in the hour, and which is perceptible as far as the parallel of 25° S.; where it becomes blended with the N.W. current, produced by the S.E. trade wind.

On the S.W. quarter of the Bank, between 36½° and 37°.S., and between the meridians of 19° 40′ and 21°, the current appears to form eddies, or a kind of whirl; and hereabout the easterly or *Connecting Current*, from the South Atlantic, passes at no great distance from the Bank: the latter appears often to disturb, and absolutely impede, the opposite current, which sets round the Bank, being by far the most powerful of the two in this place, and it is apparently the cause of turning the Agulhas current to the eastward, after the eastern side of the Bank has already turned it from a westerly to a southerly direction.

EXEMPLIFICATION.—On the 18th of May, 1815, H.M. sloop *Victor*, Captain Basil Hall, from India, made the land near the River Keiskamma, in longitude 27½°, and pursued a course, impeded by westerly gales, over the Bank. On the 26th, the ship had advanced to beyond 38° S. in 20° 10′ E., and had the Quoin of Agulhas in sight on the 29th, being then on her way to False Bay. During this period she was set by the current 186 miles to the westward, and 72 miles to the eastward, making an aggregate of 114 miles, or 2° 18′ of westing, *in longitude*, more than the dead reckoning.

Examples on the set of the current given by Captain Horsburgh:—

The **Anna**, from Bombay, 1801; 20th July, began to experience the westerly current in 30½° S. and 37° E.; it set West, 38 miles; on the 29th, it set West, 35 miles; 30th, it set W. 16° S. 48 miles; 31st, W. 12° S. 77 miles; lat. at noon, 32½ S., lon. 31° 40′ E. During this time the winds were light at S.E. and eastward.

1st August; current checked by a strong gale, veering from N.E. to N.W. and W.S.W. August 2nd and 3rd, current, each day, 30 miles to the westward; 3rd, land near Cape Recife in sight, hence wind variable, with two gales from the westward, until the ship, on the 13th, had advanced beyond the peninsula of Good Hope, during which time the current had generally set westward, 15 or 20 miles daily; and on one day, 45 miles.

During the westerly gales the current was completely checked; and, by the force of these gales, it sometimes set *eastward*.

The **Anna**, from China, April, 1799; In the stream of the current, 21st April. Latitude at noon of the preceding day, 35° 11′, lon. 27° 59′: no current then perceptible. On the 21st, lat. 35° 3′, lon. 26° 52′, the current had set W. 32° S. 27 miles. On the 22nd, W. 19° S. 52 miles; 22nd, at noon, lat. 35° 13′, lon. 25° 5′, light winds from the westward. On the 23rd, at noon, lat. 35° 56′, lon. 22° 51′, the current had set W. 36° S. 87 miles, being more than 3½ miles in the hour. The ship greatly agitated by the strength of the current; the sea rising in confused heaps, although with a moderate breeze from the W.N.W.

April 24th, at noon, lat. 35° 30′, lon. 18° 58′, current had set W. 19° S. 32 miles: 25th, at noon, abreast of False Cape, no westerly current, but a set of 9 miles northward.

Arniston and **Fleet**, May, 1805. On the 28th, at noon, lat 30° 57′ S., lon. 31° E. Land in sight until 5 p.m. on the 29th. On the 29th, at noon, lat. 32° 25′, lon. 30° 0′, the current had set S. 38° W. 88 miles in the twenty-four hours. On the 30th, lat. 34° 14′, lon. 27° 46′, current W. 14° S. 44 miles. On the 31st, lat. 34° 21′, lon. 26° 36′, current W. 22° S. 65 miles.

1st June, lat. 34° 53′, lon. 25° 15′, current W. 16° S. 66 miles. 2nd June, lat. 36° 12′, lon. 22° 36′, current S. 40° W. 74 miles. 3rd June, lat. 36° 23′, lon. 21° 42′, current S. 35° W. 27 miles. More to the westward the current was imperceptible.

Northampton, December, 1802, at 9 a.m. on the 23rd, the coast of Africa bore North, about 25 leagues. At noon the ship was in lat. 35° S., lon. 24° 54′. Dec. 24, at noon, lat. 36° 33′, lon. 21° 53′, a very confused swell, which makes the ship uneasy. Found that, during the twenty-four hours, a current had set W. 20° S. 139 miles, equal to 5¾ miles in an hour. This is considered as an extraordinary example, and the velocity is attributed to the effect of constant gales from the westward, which had *previously* prevailed, and which had prevented the progress of ships' until the 20th of December, or thereabout, when they abated, having in the meantime *kept back the current*, which afterwards set with a proportional and increased velocity.*

Upon the whole it appears, from experience, that the current on the coast of Natal sets along shore to the south-westward till it unites with the Oceanic Stream on the edge of the Cape Bank, in the longitude of 27½° or 28° E., eastward of Algoa Bay. After this junction, on the meridian of Cape Recife, its direction coincides with the outline of the Bank, about W. by S., and continues thus to longitude 23½°, or thereabout, diverging a little more or less either to southward or westward; but seldom or never setting W.N.W. and W. by N., as it has been sometimes represented. In longitude 23½°, adds Captain Horsburgh, the edge of the Bank has a south-westerly direction, and next *S.S.W. ½ W.*, true, nearly to its southern extremity. Here, also, the current follows its concave outline, taking a south-westerly course, in longitude 24°; and, from lon. 23°, it generally sets about S.W. by S. to the southern extremity of the Bank, in 21¾° or 22° E. The velocity is greatest between 25° and 22°, along that part of the Bank which takes the most southerly direction. At the southern extremity of the Bank it seldom runs strongly beyond the parallel of 36½°, or to the westward of the meridian of 21° E. From hence a part seems to set weakly to the westward, and is gradually lost in the ocean; but the strongest part follows the convex extremity of the Bank, and continues to set along the western edge of it to the *north-westward*, directly toward the Cape of Good Hope. This north-westerly current seldom exceeds half the velocity of that setting to the south-westward, on the other side of the Bank.

---

* In the North American Sea, northerly or adverse winds have a similar effect on the *Florida Stream.* See "Memoir on the Atlantic," 10th edition, page 231.

An eddy current has also been described as setting from the shore of Cape Agulhas to the southward, the general course of which has not been clearly defined.

The EASTERLY or COUNTER CURRENT of AGULHAS.—This current seems to be a branch of the Cape current, which, opposed by the main swell from the south-westward, winds from the south-western edge of the Bank, and thence sets to the eastward. Blending with the *Southern Connecting Current*, it has frequently been experienced between the parallels of 36½° to 40° S., and between the meridians of 26° and 30° E., and its waters, mixed with the Southern Connecting Current, as shown hereafter, may reach 60° E., between the parallels of 35° and 40° S.

Captain Horsburgh says, in reference to this current, "In February, 1798, we kept mostly in 40° and 41° S. from the meridian of Cape Agulhas to the meridian of the S.W. part of Madagascar; and had, in general, a daily set of from 20 to 30 miles eastward; and, at two different times, 60 miles in twenty-four hours. From the meridian of Cape Agulhas to the meridian of Cape St. Mary we had four degrees of easterly current in 10 days, with variable winds from every quarter, but strongest from the westward."

In 1800, Nov. 28. The ship Sir Edward Hughes, at noon, in lat. 39½°, on the next noon in 38¾°, lon. 26°. The current in the interval had set E.N.E. ¼ E. 54 miles.

In 1792, July, the ship Thetis, in twenty-four hours, set by the current 38 miles to the eastward; lat. 36½°, lon. 28½°. In her two preceding voyages a similar current to the eastward had, in this part, been found. The sea always much agitated.

The Anna, in 1799, from the 17th to the 20th of April, had a strong current to the S.E. in lat. 36°, lon. 27° and 28°. No set to the westward was perceptible until in 35° S. near the verge of soundings.

The Tracks, Winds, and Weather, over the Bank of Agulhas, are described hereafter.

2.—THE SOUTH AFRICAN CURRENT.

The SOUTH AFRICAN CURRENT is a continuation of the *Agulhas Current*, which sets, as already noticed, along the western coast of Africa toward the Equator, where it is connected with the Equatorial stream. On the parallels of Congo and the River Zahir it exists as a powerful and very extensive stream, setting to the north-westward and westward, along the Equator, whilst the *Guinea Current*, from the North Atlantic, meeting it, passes *within*, and nearly brushes it in its way to the Bight of Biafra, where it terminates, being barred up by the lands to the eastward, as shown in the "*Memoir*," &c., on the Atlantic Ocean.

The South African Current is analogous to the Peruvian or Humboldt's Current, which runs to the northward along the West coast of South America, but is of a different origin, the South African Current being, in fact, a tropical current of warm water, which may be traced, as before stated, to its head to the North of Australia. The Peruvian Current, on the other hand, is a prolongation of the Antarctic easterly drift (the equivalent to the Southern Connecting Current in the Ethiopic), but which is there intercepted by the greater southerly projection of the American continent. With these exceptions the features of the two currents are similar, and they supply similar places in the circulation of the two oceans.

3.—THE GUINEA CURRENT.

This singular current, the origin of which does not appear to have been properly explained hitherto, is a band of current setting to the *eastward*, against the usual course of the trade wind and tropical drifts, along the Guinea Coast, quite up to the Bight of Biafra. It has been shown in the Directory for the Pacific Ocean, Part II., that there exists a similar current, which runs across the entire breadth of that great ocean, between lat 4° and 10° N. of the Equator, almost or quite up to the Bay of Panamà. From the fact of this *counter current* being to the North of the Equator, or in the zone where the N.E. and S.E. trade winds meet and neutralize each other, it is fair to infer that it is formed by similar causes; the drifts from each trade wind here meeting and forcing the waters to return upon their previous set. That Major Rennell's supposition, that this is a prolongation of the *set down the coast of Marocco*, &c., is not the correct one, may be inferred from his own charts, and other observations (see those of the Baron Roussin, given hereafter), and is of the same nature as the Pacific Counter Current.*

Near Cape Mount the current, in general, sets in upon the shore, and on the West of Cape Palmas, about a point from the shore, running with considerable violence round the Cape. The general direction between Cape Palmas and Bonny, or the Bight of Biafra, is easterly, varying in velocity from 12 miles in twenty-four hours to 30 miles in the same time. From April to September the current runs with the greatest rapidity to the eastward; but, from the latter end of September to March, it sets occasionally to the westward. The Harmattan Wind is also accompanied by a westerly current, and a tornado gives an impulse to the water in the same direction, which frequently continues during a day or two afterwards. In the Bight of Biafra the easterly current is met by that from the southward, as noticed on page 27; the united streams then run to the S.W. and westerly, as explained in the *Atlantic Memoir*, 10th edition, p. 205, and which southern tendency is probably subject to considerable variation, from the effect of the periodical winds, &c.

4.—THE EQUATORIAL CURRENT.

The EQUATORIAL CURRENT, as it has been found to predominate between the Equator and the parallel of 3° S., has been described, in general terms, in our "*Memoir on the Atlantic.*" The inner edge, or southern border of this stream, appears to blend with the flood tide setting westward, while the ebb, in a great part of the way, sets in a contrary direction along the shore, from West to East.

Between the meridians of 40° and 45° W., and the parallels of 1° and 4° N., the Equatorial Current has been found to set from N.W. to North, and [in September] N. by E.: and the northerly current has been described to prevail from longitude 40° to the coast, in the parallels of 2° to 5° North, so as to make it requisite, for those proceeding westward, to adopt, from May to October, a S.W. course, and from October to May, a W.S.W. course, in order to preserve the parallel.

H.M. ship *Sapphire*, on a cruize on and near the Line, found the Equatorial Current setting W.S.W. to W.N.W., but much weaker in longitude 37° than in 43°; its greatest strength being nearest to the land. In the month of April, 1815, it was found by the officers of H.M. ship *Leonidas*, near the meridian of 40°, and South of the Line, setting in these directions from 28 to 50 miles in the twenty-four hours; its greatest strength being in latitude 1½° South, and toward the coast.†

In June, 1830, on the Equator, and in longitude 40°, Captain Geo. Cheveley found a strong current N.N.E. of 1¼ miles in the hour; a proof of its variable directions, according to the season.

In rounding the point North of Cape St. Roque, between Pernambuco and Seara, the current was tried by the same commander, and found to set 3 miles an hour, taking off in a westerly direction, and decreasing to 1 mile an hour on approaching Point Macoripe. In the Bay of Seara the current set W.N.W., from one-half to three-quarters of a mile in the hour.

It appears, from the preceding facts, that although the current in the outer offing, by which is to be understood the EQUATORIAL CURRENT, generally sets to the W.N.W. and N.W., yet here the phenomenon of parallel streams, flowing in opposite directions, is to be found. It is now clear that within the inner edge or border of the Equatorial Current the stream of the tide and the in-shore current, blending more or less, are variable; and the stream does not *always* set to the westward along the coast, as may have been supposed. Captain Livingston informs us that in 1824 he found it setting strongly to the westward, near the meridian of 38° W., or eastward of SEARA, or where the *Inconstant* frigate, 1st of April, 1814 (as shown by chart), was set N. 73° W., 47 miles in twenty-four hours. But on proceeding next day from Jericoacoara to the westward, the vessel was much retarded by an easterly stream, with a little inclination to the southward.

"Ours," says Captain L., "was not a solitary instance, as I have heard many persons describe how they had been deceived by allowing for a westerly current; though all the old traders at Maranham own that at times, and I think more frequently than otherwise, it sets to the westward." All this, however, may easily be accounted for, when the course and operation of the tides are known.

---

* See also Journal Royal Geographical Society, Vol. XXIII., 1853.

† From the Island of Ascension, so famous as a nursery of turtles, many young ones, of the *best quality, are carried* by the Equatorial Current to the West Indies.

5.—THE BRASILIAN CURRENTS.

On the eastern coast of Brasil the Stream Currents, formed as already noticed, are varied according to the direction of the winds or monsoons, and the inclination of the coast. The *Baron Roussin* says, "As the winds do not impede the navigation of these coasts, neither do the currents. They generally follow the winds, according to their force and direction; for there is no river between Maranham and the Isle of St. Catherine powerful enough at its mouth to carry with it any sensible motion into the sea to more than 1 or 2 leagues from the coast. The winds are variable, so are the currents; their change is very quick. In these warm seas the waters are very clear, and they are disturbed by the first impulse given them. At the end of twenty-four hours, if the breeze be strong, you may observe a current running in the same direction. After a great number of observations on the currents, we have estimated, more or less, their velocity along the coast, from the Island of St. Catherine to Pernambuco, at six-tenths of a mile an hour in the two monsoons; it is often under that quantity, rarely above it, sometimes nothing. The velocity of the currents is more considerable in the southern monsoon than in the northern, because the wind is stronger in the first instance than in the other.

"But the velocity varies on different parts of the coast. Between the parallel of the Island of St. Catherine and that of the Abrolhos, or 18° S., and from 2 to 10 leagues from land, the current is hardly to be discerned in any season. From the 18th to the 11th degree the waters carry you to the N.W. during the southern monsoon. From the 11th to the 9th degree it sets to the N.E. in the direction of the coast, quickening its motion. Passing the 9th degree, in proceeding northward, the waters carry you to the northward with greater velocity, which increases at times to the rate of 36 miles in the twenty-four hours, and is seldom less than 20. To the N.W. of Cape St. Roque it sometimes sets at the rate of 48 miles per day, the waters running W.N.W. in the direction of the coast.

"On passing Pernambuco, and in following the land to the northward, the currents and monsoons can rarely have any influence of consequence to navigation. More to the southward their effect is greater, and they may be considered as tides; these, again, are not important, as they do not extend far from land, and only affect vessels going to the small ports or creeks on the coast. Most of the great ports are subject to the regular tides.

"Adverting to what has been said on the winds and currents off the coast of Brasil, we must conclude, first, that between the Isle of St. Catherine and Olinda, or Pernambuco, there is no permanent obstacle against navigation; and the recommendation to make the land to windward of the place you are going to, is a matter of precaution to preserve yourself from all disappointment. Secondly, from the Point of Olinda, all along to Cape St. Roque, and thence to the Isle of Maranham, prudence dictates that you should keep to the eastward of the point you would arrive at, after compensating in the track the effect of the currents carrying you to the W.N.W."

Captain Hewett says, "During the southerly monsoon the currents to the southward of Cape St. Augustin are not so powerful as to the northward, where they increase in strength until the months of June and July, and then gradually decline. On the contrary, in the northerly monsoon they are generally very strong to the southward of Cape St. Augustin, when they are weak to the northward, as they have some difficulty in detaching themselves from the stream which runs from the S.E. trade around Cape St. Roque."

Mr. Lindley also notices that "A strong current runs southward from Cape St. Augustin, commencing about the middle of October, and continuing until January; after which there is no particular current till the middle of April, when a powerful one sets in northerly till July, and then subsides in like manner."

The southern tendency of the current was felt in proceeding from Fernando Noronha to Bahia, by Captain FitzRoy, who says, "From the 23rd to the 27th of February, 1832, we found a current setting to the southward, between 20 and 30 miles each day. This was quite unexpected by me, for I thought we should have been set westward."

The currents of the River Plata, and other local currents near the shores, will be noticed hereafter.

REMARKS ON THE CURRENTS BETWEEN THE COASTS OF GUINEA AND BRASIL, MADE BY CAPTAIN EDWARD SABINE, R. ART., F.R.S., IN H.M.S. PHEASANT, 1822.

In the voyage between Cape Mount and Cape Three Points in April and May, 1822, Captain Sabine says that the Pheasant's progress appears to have been accelerated 180 miles by the current, called the *Guinea Current*, which, in the season when the S.W. winds prevail on this part of the coast, runs with considerable velocity in the direction of the land, from Cape Palmas to the eastern part of the Gulf of Guinea. The breadth of this current, abreast of Cape Palmas, varies with the season, and has been found as much as 180 miles; but in its subsequent course to the eastward it enlarges to nearly 300, and occupies the whole space between the land, on one side, and the Equatorial Current, running in an opposite direction, on the other. The velocity abreast of Cape Palmas and Cape Three Points, and in the vicinity of the land was, in the month of May, about 2 miles in the hour; and farther to the eastward, where the Pheasant crossed its breadth, from Cape Formosa to St. Thomas's, and where its velocity had been much diminished by the dissipation of its waters, it was found to preserve a general rate of rather less than a mile an hour, and a direction a few degrees to the southward of East.

The general temperature of the stream in the mid-channel, in the Gulf of Guinea, in April and May, exceeds 84°, diminishing from 82° and 83° on its southern border, where it is in contact with the colder water of the Equatorial Current; and occasionally to between 79° and 81½° on its northern side, in the proximity of land.

In the passage between the River Gaboon and Ascension, being a distance of 1,400 miles, the Pheasant was aided by the current above 300 miles in the direction of her course.

The current, called the *Equatorial Current*, commences much farther to the eastward than is commonly imagined; and it appears, from the recent investigations of Captain Sabine, that the island *Anno Bon* is always surrounded by it; while *Prince's Island* is equally surrounded by the *Guinea Current*. *St. Thomas's*, being in an intermediate situation, the sea around it is occasionally influenced by both. See, farther, the description of the *Island of St. Thomas* hereafter.

In consequence of the southing of the trade wind in the vicinity of the continent of Africa, the water impelled before it, which forms the commencement of the Equatorial stream, arrives from a more remote southern parallel, and is, therefore, of a cooler temperature than the drift water which successively falls into it from the S.E. impelled more obliquely to the meridian, and consequently arriving from latitudes less distant from the Equator. Thus the temperature of the stream varied from 72½° to 74°, whilst that of the drift current was 77½° and 78°.

But the more important distinction, both in amount and utility in navigation, is between the waters of the Equatorial and Guinea Currents. These exhibit the remarkable phenomenon of parallel streams, in contact with each other, flowing with great velocity in opposite directions, and having a difference of temperature amounting to 10° or 12°. Their course continues to run parallel to each other, and to the land, for above 1,000 miles; and according as a vessel, required to proceed along the coast in either direction, is placed in the one or the other current, will her course be aided from 40 to 50 miles a day, or retarded to the same amount.

On the BRASILIAN SIDE, from Pernambuco to Cape St. Roque, the northerly current rapidly accelerated, until, in passing the Cape, it may be considered that the Pheasant had entered the full stream of that branch of the Equatorial Current which pursues its way along the northern coast of Brasil and Guyana to the West Indies. Between the noons of the 16th and 17th of July she was set 44½ miles to the North, and 42½ to the West; making a general effect, in the twenty-four hours, of N. 44° W. 62 miles: probably more northerly in the first part of the interval, and more westerly in the latter, than the general effect.

On the day after the Pheasant sailed from Maranham, she entered the current, the full strength of which she had quitted to go to that place, and it was then found to be running with the astonishing rapidity of 99 miles in twenty-four hours. On the 10th of September at 10 a.m. while proceeding in the full strength of the current, exceeding 4 knots an hour, a sudden and very great discolouration of the water a-head was announced from the mast-head: the ship being in 5° 8′ N. and 50° 28′ W. (both by observation), it was evident that the discoloured water could be no other than the stream of the Marañon, pursuing its original impulse at no less than 300 miles from the mouth of the river, its waters not being yet mingled with the *blue* waters of the ocean, of greater specific gravity, on the surface of which it had pursued its course. It was running about 68 miles in twenty-four hours.

BRASILIAN CURRENTS, CONTINUED.—In the brig *Mary Brade*, on her homeward passage from Rio Janeiro, May 20th to 28th, 1823, Captain J. W. Monteath found the currents, &c., as follow:—

In lat. 3° 51′ N., lon. 25° 30′, weather variable and squally, with rain throughout.

In 2° 33′ N.	25′ 5′ W.	Current West, 29 miles.
0 14 N.	25 27 —	The same, 22 miles.
2 3 S.	25 43 —	The same, 30 miles.
4 29 S.	26 23 —	S. 77° W. 27 miles.
6 53 —	27 19 —	S. 72° W. 41 miles.
8 50 —	— —	in 48 hours.
10 18 —	28 23 —	S. 72° W. 12 miles.
12 8 —	29 7 —	S. 68° W. 18 miles.
13 56 —	29 40 —	S. 54° W. 25 miles.

In December, 1825, Captain Monteath, homeward bound, found the currents as follow:—

Lat. S.	Lon. W.	Wind.	
7° 14′ ...	34° 42′ ...	East to E.S.E.	... N. 82° W. 21 miles.
8 14 ...	34 50 ...	E.N.E. to E. by N.	... S. 36° W. 22
8 58 ...	34 53 ...	E. by N. to N.E. by E.	... S. 68° W. 26
9 1 ...	35 1 ...	E. by S. to E.N.E.	... S. 15° W. 15
9 23 ...	35 21 ...	E.S.E. to East	... West 14
9 44 ...	35 41 ...	E. by N. to E.S.E.	... S. 72° W. 25
10 15 ...	35 50 ...	E. by N. to East	... West 10
10 51 ...	36 0 ...		... Not perceptible.
14 45 ...	35 51 ...	N.E. to E. by N.	... S. 20° W. 20
13 55 ...	37 10 ...	N.E	... S. 9° W 13
14 47 ...	36 12 ...	At noon, Dec. 9.	

In February, 1824, on his passage from Valparaiso, in Chilé, to Rio Janeiro, Captain Monteath experienced the Currents as follow:—

In 27° 13′ S.	lon. 39° 12′	Current South, 18 miles.	
31 46 —	39 33	S. 80° E. 12 miles.	
32 38 —	41 45	East, 28 miles.	Stream of La Plata.
34 3 —	43 59	East, 30 miles.	
39 45 —	47 58	South, 22 miles.	
40 47 —	47 32	South, 20 miles.	
40 34 —	47 54	South, 20 miles.	

On a second voyage in 1824, on Dec. the 30th, in lat. 37° 29′ S., lon. 45° 8′ W., the current was found to have set N.E. ¾ N. 43 miles in the twenty-four hours. Next day, lat. 38° 24′, lon. 46° 40′, N.E. by E. ½ E. 34 miles.

In lat. 40° 20′, lon. 48° 22′, 11th of January, 1824, current N.N.W. 24 miles. Temperature of the water, on the surface, 69°; at the depth of 120 fathoms, 62°. *No variation of the compass.**

Ten leagues to the southward of Diego Ramirez, current S. 83° E. 58 miles in three days.

REMARKS by CAPTAIN FOSTER.—*Between Staten Island and Cape Horn*, lat. 54° 45′, lon. 63° 29′, to lat. 56° 12′, lon. 66° 52′, in four days Captain Foster found the surplus current had set N. 80″ E. 11·6 miles in twenty-four hours. *December*, 1828.

Between Cape Horn and South Shetland, lat. 56° 18′, lon. 67° 28′, to lat. 62° 58′, lon. 63° 1′, in five days the surplus current had set S. 65° E., 11 miles in the twenty-four hours. 29th December, 1828, to 5th January, 1829.

Between South Shetland and Cape Horn, lat. 62° 30½′, lon. 62° 31′, to lat. 56° 0′, lon. 67° 19′ in eleven days of March, 1829, current N. 49° E. 21 miles in the twenty four hours.

---

* From Brasilian Trinidad to Staten Land, in fifty-eight days (12th May to 9th July, 1824), Captain Livingston states that he was set 225 miles North, 208 South, 496 East, and 472 West, of account; leaving *surplus effect of current only* 17 miles North and 24 East.

Between Cape Horn and Staten Island, lat. 55° 59½′, lon. 67° 14′, to lat. 54° 49′, lon 63° 18′, current and *tide* N. 51° E., 54 miles in twenty-three hours; 24th and 25th o May, 1829.

Captain Foster adds, the effect which these observations appear to point out, is that o an easterly motion of the sea, in the vicinity of Cape Horn, produced, no doubt, by th prevalence of N.W., West, and South-westerly winds; and although its direction i sometimes much to the North, as well as to the South of the East, this deviation, in al probability, arises from the prevalence, or greater strength, of the N.W. or S.W. wind over each other during the intervals between the observations, as it was generally remarke that the currents' deviation from the East, toward the North or South point of the compass, was in accordance with the prevalence of one of these winds over the other durin the above interval.

The strength of this set appears also to be much influenced by that of the winds; for during the voyage from *Cape Horn* to *South Shetland*, it was found, at the time o meeing with N.E. winds in the parallel of 60° S., the set to the eastward was diminishe in its velocity to about half the amount we had previously experienced.

From these several irregularities, the individual observations do not admit of any ver satisfactory conclusions being drawn; but taken collectively, they uniformly indicate a easterly or north-easterly set, as shown above: and, on looking back, it will be seen tha in the voyage from *Staten Island* to *Cape Horn*, a current setting to the N. 80° E., at th rate of 12 miles in the twenty-four hours, may be expected in the summer months; an that, between *Cape Horn* and *South Shetland*, a current setting to the S. 65° E., of equa strength, was experienced during the same season of the year; whilst, in the autumna months, this current was found to set to N. 49° E., with nearly twice the velocity; whic seems to indicate that the winds from the south-western quarter in autumn are mor violent and of longer duration than in the summer season: and indeed, on a review o the winds during the passages in the different seasons alluded to, it was found that th N.W., West, and S.W., winds exceeded those from all the other quarters put together, i the month of March, in the ratio of four to one; whilst in the summer months, an during an equal interval, these winds were found to exceed all others in the ratio of tw to one only, which points out, at once, apart from other circumstances, the most advantageous time of the year for rounding this noted promontory to be the summer months o these regions; and certainly, from the strength and frequency of the gales we experience in the month of March, I am induced to recommend the summer season as the prope time for the navigation of these seas; particularly as, at this season, north-easterly wind may be expected in the parallel of 60° South, and which, in all probability, continue t blow in a high southern latitude throughout the summer, as we found the north-easterl wind to be the prevailing wind during our residence at South Shetland, in the months o January and February.

The next and most important conclusion to be drawn from these observations, is tha of the set of the flood tide round *Cape Horn*, which appears to come from the S.W.; such at least, seems to be the case from the observations made during the passage of the *Chanticleer* from *Cape Horn* to *Staten Island*, in May, 1829; when, at the time of taking ou departure from *Cape Horn*, it was ascertained to be nearly low water; and on our arriva off *Cape St. John* the flood tide had just made its mark. The passage from Cape Hor to Staten Island was performed in twenty-three hours, in which interval we had felt th whole influence of flood tides, whilst that of one ebb only had been experienced; an on comparing the ship's place, ascertained in the most unexceptionable manner, b bearing at the time of our departure from Cape Horn, and on arrival off Cape S John with the dead reckoning, made under very favourable circumstances, viz., fin weather, a free though side wind, and the ship's way through the water measured with self-registering log, a set to the N. 51° E., at the rate of 54 miles in 23 hours, was experienced; from which, if 24 miles be deducted for the effect of the previously established current at this season, we have 30 miles for the set of the flood tide at *neaps*, o about 3 miles per hour, taking into consideration that, as we advance to the eastward the flood tide is prolonged; and, on the contrary, the continuance of the ebb is thereb curtailed. How far the strength of these tides may have operated in producing some o *the irregularities in* the north-easterly set of the sea, deduced from the previous obser rations when near in-shore, by having been influenced by either tide for a longer period in the interval between the observations, I have not ascertained; but from some notes which were made at the time, I have every reason to believe that the tides caused part of the irregularities in question.

In addition to these observations, the following remarks by Captain FitzRoy will confirm the conclusions above arrived at.

"There is a current setting past the islands from S.W. to N.E.; a current which continually brings drift wood to their southern coast, and has brought Fuegian canoes. On all parts of the southern shores that are open to the S.W. the beaches or rocks are covered with trees, which have drifted from Staten land, or Tierra del Fuego. Great quantities of this drift wood may be found between Cape Orford and Cape Meredith; upon the Arch, Speedwell, George, and Barren Islands: indeed there are few places between Cape Orford and Choiseul Bay where a vessel may not find a good supply of fuel. On Long Island, and in the Bay beyond the Sea Lion Islands, portions of Fuegian canoes have often been found; one consisted of an entire side (pieces of bark sewed together), which could not have been made many years. At sea, when northeastward of the Falklands, great quantities of kelp (seaweed detached from the rock, and drifting with the current,) are seen, besides water-worn trunks and branches of trees, near which there are generally fish, and numbers of birds. These sure indications of a current from the S.W. have been met with upwards of 200 miles to the northward of Berkeley Sound. There is not, however, reason to think that this current ever runs more than 2 knots an hour, under any circumstances, and in all probability its usual set is less than 1 knot."—(Narrative, &c., Vol. II. p. 242.)

It has also been noticed by *Captain FitzRoy* that on the S.E. coast of *Tierra del Fuego* the tide is felt strongly, causing races and eddies near the projecting points. In the offing it sets strongly toward the Strait of Le Maire, from 1 to 3 miles an hour, when the water is rising on the shore and the wind westerly. While the water is falling it runs with less strength, and with an easterly wind it is not perceptible.—*See page* 21.

6.—THE SOUTHERN CONNECTING CURRENT.

This current flows eastward over the ocean between the variable drifts, &c., in the parallel of 40° S. and the S.E. trade wind, commencing in that of 25°. Major Rennell accounts for it thus: "From between 20° and 25° S. to the verge of the trade wind, the drift current on the West side of the Atlantic takes a bend to the southward through the whole space, generally, from the coast of Brazil to 17° of longitude East from it, or about 300 leagues, which may probably be accounted for from the quantity of drift impelled to the westward by the trade wind, and which cannot reach the coast from want of room, and can escape no other way. This accumulated water, passing to the South beyond the limits of the trade wind, and consequently of the western drift, runs off to the eastward, and is consequently augmented in its way by the prevailing *westerly* winds, and by drift bending southward, becomes a large stream before its arrival at the neighbourhood of the Cape of Good Hope."

This is a part of the ocean but imperfectly known; so that, generally, between 30° and 40° of latitude, and longitudes 35° and 40° West, is nearly a blank in the chart. It is, however, known that a constant drift or slow current runs to the East or E.N.E. from the Island of Tristan da Cunha; and, indeed, every circumstance proves that there is a general motion to the East between the parallels of 30° and 40° South, and which, when it approaches the Cape of Good Hope, is a very wide and strong current, strong enough to run 2,000 miles beyond the Cape.

It has already been shown that the *Southern Connecting Current* blends with the *Counter Current* from the *Bank of Agulhas*, as described on page 25.

THE ROLLERS OF ASCENSION, FERNANDO NORONHA, ST. HELENA, ETC.

In connexion with the Tides and Currents of the Ocean, we now introduce a description of the Phenomenon called the ROLLERS, from the Narrative of Mr. Webster. In describing Ascension this gentleman says, "One of the most interesting phenomena that the island affords is that of the Rollers; in other words, a heavy swell producing a high surf on the leeward shores of the island, occurring without any apparent cause. All is tranquil in the distance, the sea breeze scarcely ripples the surface of the wave, when a high swelling wave is suddenly observed rolling toward the island. At first it appears to move slowly forward, till at length it breaks on the outer reefs. The swell then increases, wave urges on wave, until it reaches the beach, where it bursts with tremendous fury. The Rollers now set in and augment in violence, until they attain a terrific and awful grandeur, affording a magnificent sight to the spectator, and one which I have witnessed with mingled emotion of terror and delight. A towering sea rolls forward on the island, like a vast ridge of waters, threatening, as it were, to envelop it; pile on pile succeeds with resistless force, until, meeting with the rushing offset from the shore beneath, they rise like a wall, and are dashed with impetuous fury on the long line of the coast, producing a stunning noise. The beach is now mantled over with foam, the mighty waters sweep over the plain, and the very houses at the town are shaken by the fury of the waves. But the principal beauty of the scene consists in the continuous ridge of water crested on its summit with foam and spray; for, as the wind blows off the shore, the over-arching top of the wave meets resistance, and is carried, as it were, back against the curl of the swell; and thus it plays elegantly above it, as it rolls furiously onward, graceful as a bending plume; while, to add more to its beauty, the sunbeams are reflected from it in all the varied tints of the rainbow.

"Amid the tranquillity which prevails around, it is a matter of speculation to account for this commotion of the waters, as great as if the most awful tempest, or the wildest hurricane, had swept the bosom of the deep. It occurs in situations where no such swell would be expected, in sheltered bays, and where the wind never reaches the shore. The strong and well-built jetty of the town has once been washed away by the rollers, which sometimes make a complete breach over it, although it is 20 feet above high water mark. On these occasions the crane at its extremity is washed round in various directions, as the weathercock is turned by the wind, and landing becomes impracticable for the space of two or three days. Such are the Rollers of Ascension, and like unto them are those of St. Helena and Fernando Noronha.

"The season in which the Rollers prevail is from December to April, not but that they do occur at other periods, and they have been felt severely in July. Ships at the anchorage are perfectly secure, and they have to apprehend no danger unless within the immediate influence of the breakers. Not only are the seasons of the Rollers the same at St. Helena and Ascension, but they sometimes are simultaneous in occurrence. The *Chanticleer*, while at anchor at St. Helena, on the 17th and 18th of January, 1830, experienced some very high rollers, insomuch that Captain Foster and his gig's crew landed with the utmost difficulty. On our subsequent arrival at Ascension, I inspected the meteorological journal of my friend Mitchell, the surgeon of the island, and found it noted that the rollers were so violent on the 15th, 16th, and 17th of January, that landing was impossible. Here, then, is a coincidence as to time.

"The cause of the Rollers has been speculated on, and various conjectures have been formed of them. Some have attributed them to the effects of the moon:

'Whom Ocean feels through all his countless waves,
And owns her power on every shore he laves.'

And others have attributed them to the tides; but it is evident that these have nothing to do with them. They occur in the most tranquil season of the year, when the S.E. trade wind is often very light, where the vast volume of water is constantly impelled in one direction. There is then a tendency to a back set, or a rush of water in a contrary direction, and a tumultuous swell is produced wherever it meets with the resistance from the islands and the banks on which they are based, as well as the shores of a continent. The long steep beaches of Ascension are admirably adapted for the full display of the effect which has been just described."

In the *Colombian Navigator*, Vol. III. p. 26, *et seq.*, is given an extract from a paper by the talented Sir Robert Schomburgck, in which the reader will find descriptions of these phenomena on the north-eastern face of the West India Islands.

These remarkable waves, which are felt on most of the shores of the ocean, have, it is probable, different causes which produce them; but their most frequent origin, it may be assumed, is in the hurricanes and storms of the Equatorial regions.

A few extracts will illustrate our point,—that they are caused by the storms and gales of distant regions.

Captain Midgley says, "On my outward passage from Liverpool to Africa, in the ship John Campbell, on the 29th December, 1840, in lat. 33° 3′ N., lon. 19° 24′ W., about 3^h p.m., I found the vessel suddenly entering into very heavy Rollers, setting from the N.W. quarter. The wind was moderate from S.E. by E., the ship steering to the S.W. *Much sheet lightning had been previously seen in the N.W. quarter*, and a few showers of rain had fallen. These Rollers were in too regular ridges to be mistaken for the sea which marks the commencement or termination of a gale of wind, although they sometimes topped into breakers. The ship was going 5 knots through the water, and came suddenly amongst them, when the Rollers increased very rapidly, and as rapidly terminated. The ship continued in these for about 4 hours, and sailed 21 miles through them. The weather fine and clear, and the barometer perfectly steady throughout the day (at least from the preceding noon), at 30.20, attached thermometer, 64° Fahrenheit at 8 p.m., moderate breezes from S.E. by E., with generally fine clear weather, and much sheet lightning in the N.W. quarter."

Captain FitzRoy says, "Returning homeward by St. Helena, Ascension, and the Cape de Verde Islands, I had opportunities of proving that the Rollers which sometimes set heavily on their shores are caused by distant gales of wind. Those at Ascension and St. Helena, for instance, by pamperos, and those at the Cape de Verdes by the severe though generally short gales met with between the tropics, in the time of the line westerly monsoon. These latter gales may also send Rollers toward the N.W. side of Ascension."[*]—*Geog. Journal*, Vol. VI. p. 335.

Sir R. Schomburgck, in the before-mentioned paper, states, "The period when the ground-sea sets in is generally October, and it continues, though with some intermission, till April and May. Any individual acquainted with the coasts of North America will be aware that during that time frequent storms prevail, and the circumstance that a northern wind either precedes, sets in with, or follows a ground-sea, and that only the northern side of the West India Islands are exposed to it, confirms me in my opinion, that it is caused by gales in the Atlantic, or on the northern coasts of America."—*Journal of the Geographical Society*, Vol. V. p. 24.

Their simultaneous occurrence at St. Helena and Ascension, as described on the preceding page, is an additional proof of their distant and similar origin.

The diminished pressure of the atmosphere, indicated by the fall of the barometer, during the period of the hurricanes, and the probably consequent elevation of the level of the sea at that place, from this cause, will also tend to explain their origin; for after the storm had ceased the sea would naturally fall,[†] perhaps to a lower level than usual, and thus give an additional impetus to the waves, risen by the tremendous effects of the wind.

These waves, which increase in magnitude and velocity in their onward progress from the centre, from their becoming merged and united, and thus attaining a regularity and height quite distinguishable from the ordinary swell of the ocean; as may be seen on a small scale, by the concentric ripples caused by dropping a stone into the smooth waters of a lake, and thus when they arrive at any point which interrupts their course, the magnificent effects described occur. These waves, which obviously would be heightened in their effects and continuance by the wind blowing in the direction of their course, would proceed onward until their velocity and diminished elevation are entirely spent.[‡]

---

[*] "The heavy rollers which somotimes set in upon the coasts of Chili and Peru, led me to seek for proofs of the causes being such as I then suspected. But there is at times another kind of 'Rollers,' which are perhaps caused by an earthquake."—*Ibid.*, p. 336.

[†] "Before a hurricane at the Mauritius, the water rises considerably, and is agitated. In other parts of the world the sea rises before a storm some feet above its usual level. At the same time, mercury in a barometer falls. Is not this rising of the waters caused by diminished pressure of the atmosphere at those places, while at other more distant parts there is an increased pressure?"—*Captain FitzRoy*.

The *seiches* of lakes and inland seas, described by Colonel J. R. Jackson, in the Geographical Journal, arise from the same cause. One portion of the Lake of Geneva, the Baltic, the Caspian Sea, or the Mediterranean, being frequently observed to rise or fall below their usual level, without any apparent or adequate cause.—*Geographical Journal*, Vol. III., p. 271.

[‡] That this distance is very *considerable at times*, may be inferred from the fact that "heavy

By the magnitude of the wave is not meant the actual height of it, but rather its breadth; for as the larger the wave the greater is its velocity, and therefore it will have a greater effect when striking against a shore.

Another cause of the rollers, ground swell, or ground sea, may be an earthquake; but as these are but of rare occurrence, and of short duration, the larger number of these phenomena cannot be referred to such an origin.*

For other particulars concerning them, the reader is referred to the Atlantic Memoir and the Colombian Navigator, Vol. III.

IV.—BRIEF EXTRACTS ON THE ANIMALS AND PHENOMENA OF THE OCEAN.

[CHIEFLY FROM THE COPIOUS "NOTES" OF MR. LUCCOCK, MR. WEBSTER, &c.]

ANIMALS, &c.—BETWEEN the tropics FLYING FISHES abound, but are evidently larger on the southern than on the northern side of the Line. They rise out of the water in large shoals, with their fins extended, but motionless; and sometimes fly to the distance of 60 or 80 yards.

The DOLPHIN of the Atlantic is improperly called so by British seamen; foreigners name it the *Dorado* or *Dourada*. It delights to swim in the shadow of the vessel; and seems fond of figure, or motion, or a brilliant bottom. It darts about with great rapidity and ease, is very voracious; and easily taken with a hook. When secured, it is not boisterous, but easily held by a line which is incapable of supporting its weight, and quietly resigns itself. When dying, the colour changes, but the various hues are by no means pleasant ones, and all its brilliancy disappears.†

The GUARAPEMA, called so by the Brasilian Indians from its swiftness, abounds on their coast; and is distinguished from the common Dorado chiefly by its larger size, by the colour of the fins and tail, which is a bright yellow, and by the blue spots on the sides, which are round and beautiful.

SHARKS abound in every part of the ocean, and are sly, jealous, and voracious monsters. Sailors have a rooted antipathy toward them; and the capture of one, particularly on board a Portuguese vessel, is always a subject of triumph. They seem to be the terror of all other fishes, and perhaps of their own species, for they are usually found singly, and create a sort of desert where they go. Fortunately for their prey, their motion is slow; for themselves, their powers of digestion are feeble.‡

The shark is very tenacious of life, and most easily destroyed by taking off the tail, an operation which opens the principal artery, and causes the creature to expire from loss of blood. Hunger compels them to feed upon each other; and when nearly of equal size, their battles seem to be violent. The suspicious caution with which they take their prey, sometimes, though not always, turning upon their backs to do so, gives to the Indians of South America an opportunity of attacking and overcoming them, even in their own element; for, aware that their eyes are so situated with respect to the mouth, that the animal cannot see his object at the moment when he wishes to seize it, nor the enemy who intends to destroy him, they dive, and dexterously pierce him from below.

The REMORA, or SUCKING FISH, attaches itself to the shark by means of its head, on the crown of which is a ridge running lengthways, and transversely to this are sixteen

---

rollers, at times (though rarely), set into Good Success Bay, in the Strait of Le Maire."—*Voyages of the Adventure and Beagle*, Vol. I. p. 456.

* Edinb. Roy. Trans., Vol. VII. p. 154.—Waves from earthquakes; and also Journal of the Geographical Society, Vol. VI. p. 322, *et seq.*

† On approaching Brasil, dolphins, flying fish, and the large and beautiful gold fish, called by the Spaniards *Bonito*, constantly surrounded the ship, and formed by day a relief from the tedium of gazing on the unvarying billows, as did, during the darkness of night, the innumerable phosphorescent animals of the mussel kind, which, studding the black ocean with sparks of fire, produced a dazzling and living illumination.—*Kotzebue's Second Voyage*, I. 23.

‡ On the 22nd of May, 1824, Captain Livingston caught a shark in lat. 31½° S., which was 9 feet long. While he was swimming under the stern, before he was hooked, four pilot fish were playing round him, and they certainly had not the least appearance of being afraid.

ridges with hollow furrows between, a structure which enables it to create a vacuum on the skin, and to bring into operation the external pressure of the atmosphere and the water. Its food consists of the scales and slimy substance of the shark's back.

Another of the shark's occasional companions is a small but beautiful fish, which swims near the surface, and keeps its station a few feet before the nose of the monster; hence it has sometimes been called the PILOT FISH. It is generally about 9 inches long, and marked with alternate bands of dark brown and light blue. While preceding its enemy, it seems conscious of its security, from its own equal speed and nearness to the surface of the water; for the foe never darts upon his prey, nor does he ever voluntarily raise his nose above the water. The Pilot fish, however, can be observed in this situation only when it is near a vessel, and then it soon takes refuge close to the side of the rudder, and keeps its station with astonishing pertinacity; hence it is frequently called also the *Rudder fish*, and will never go so far forward, under the run, as the point where the water brushes against the sides of the vessel, and strikes off from them. In this situation, perhaps, it finds rest from the fatigues of a long chase, and security from its ravenous pursuer; for the shark, unless urged by hunger, will never approach the counter of a ship or come beneath anything which overhangs his eye.

The sea in the vicinity of St. Helena is celebrated as being infested with sharks. The whole family of sharks is found here; the blue shark, the dog shark, the hammer headed shark, the copper headed shark, and the mackarel shark, all herd together, hungry for prey. They are awfully voracious, and may be justly considered as the wolf or tiger of the deep. The stomach of this fish commences not far from the mouth, and extends nearly throughout his whole length; it is, in fact, an immense bag, and by its loose integuments admits of great distension. An instance of the voracity of the shark has been known here, in the fact of an artillery man, entire and with his clothes on, being found in the belly of a large shark.*

PORPOISES abound in every part of the Atlantic, and possess the same habits as those found in narrower seas. Mr. Luccock says, The largest fish of this class which I ever saw, was about 20 miles from Cape Frio, in something more than 30 fathoms of water. That part of the back which became exposed to view was several yards long.

WHALES, though less common on the coast of Brasil than formerly, are still found there. Off the Abrolhos we saw two of these unwieldy creatures in a very sportive mood; they raised their enormous bulks, in an upright position, high above the water, and then fell sideways upon it with a weight that caused the waves to recoil, and discharge a spray to an astonishing extent around.

TURTLES are by no means uncommon in the South American Seas. They are generally of the hawk's-bill kind, and sometimes grow to a very large size. One taken off the harbour of Rio de Janeiro measured 5 feet in length, 3 in breadth, and was nearly 2 feet thick. It seemed old, and was almost covered with barnacles.

Ascension is famed for its excellent turtle, at once the riches and chief support of the island. It is the *testudo mydas*, or green turtle of authors, so called from the deep green colour of its fat. It may be considered as the staple commodity of Ascension, and the flesh of it is termed the island beef. Those who frequent the island are the full grown females, for the purpose of laying their eggs, and they generally average about 7 cwt. It is rather remarkable that no young ones are ever taken there, and none under the full size. In the proper season, from December to June, they come on shore during the evenings, preferring moonlight for their walk. They crawl up the sandy beaches of the island, and make a large hole by scooping the sand up with their flippers; having deposited their eggs in it, and carefully filled the hole up again with sand, they retreat and take again to the water. They lay from 70 to 80 eggs at a time, and it is said that they repeat this operation two or three times in a season. They are of remarkable fecundity, and browse on the seaweeds which float on the surface of the sea, as well as the green membraneous fuci at the bottom.

The meat of the turtle very much resembles good young beef, and sometimes veal, and is very good either in steaks or pies; but of this meat there is only about 150 lbs. in a large turtle. The fat, which principally lines the back shell, when melted down, forms very good oil for domestic or culinary purposes.†

---

* Mr. Webster's Narrative, Vol. I. p. 376.

† On this subject, see further, Mr. Webster's Narrative, Vol. I. p. 304.

The BIRDS of LA PLATA are distinguished for their beautiful plumage. The *Rhea*, or American Ostrich, is common, both in a wild and domesticated state, and may frequently be seen bounding over the plains with remarkable swiftness. This bird lays three or four eggs in the month of October, which are to be had in the markets, and are used for domestic purposes. They generally weigh about 1¼ pounds. Wild swans, vultures, owls, kites, hawks, parrots, woodpeckers, rose-breasted thrushes, and a variety of elegant finches, are common, besides the *Loxia Cardinalis*, or Cardinal Bird, so called from a tuft of feathers on the head. Game is plentiful, and also fish.

In adverting to the ANIMALS of the ANTARCTIC REGIONS, we may notice the whale, the seal, the sea-leopard, sea-elephant, the albatross, penguins, petrels, and other birds.

On the 7th of January, 1829, the *Chanticleer* was near South Shetland, and the narrator says, "We were quite exhilarated by the fineness of the day and the scenery around. Numerous whales were spouting up columns of water, and blowing about in all directions, making a noise not unlike that of letting off the steam from the boiler of an engine. As they came to the surface and turned majestically downward, their place was marked by the smoothness produced by the oily surface. Flocks of variegated petrels, or pintados, were circling round it, and sedulously watching these leviathans of the deep, for the purpose of obtaining some sort of food or aliment from their slimy exuvia; and penguins innumerable were popping up their heads here and there, skipping and starting out of water in the full enjoyment of their gambols."

The islands of South Shetland formerly abounded with seals; but such is the havoc made by sealers among them, that they are now scarce and seldom seen. The sea-leopard may, however, be found. This singular creature resembles the quadruped of the same name in being spotted, and is called by the scientific the *leopardine seal*. A figure of it is given in the relation of the voyage of Captain Weddell. It has a neck long and tapering, with a very small head; the body pale, greyish above, yellowish below, and back spotted with pale white. (See Voyage of Captain Weddell, p. 23.)

The *Sea-elephant* has been described in the "Narrative of Four Voyages, by Captain Benj. Morell,"* whose description is also given by Mr. Webster. The male of this species has a cartilaginous substance projecting forward from the nose, 6 or 7 inches in length, and from this peculiarity has the animal derived its name, as its purpose seems to be similar to that of an elephant's proboscis. It has been found more than 25 feet in length, and measuring about 16 feet round the body; but the female is never half that size, and in form resembles the hair-seal, which does not materially differ from the fur animal in shape, &c.

The *Albatross* is an elegant and magnificent bird, and may be justly called the sea-swan. Mr. Webster describes one which was 3 feet in height, and 10 feet in the spread from the extremities of wing to wing, and weighed 15 lbs. The feet of these birds are of a fine delicate webbed structure, large and expansive, and well adapted for swimming or alighting on the surface of the water.

Penguins have often been described. These birds form the only genus of the feathered race that are found on Staten Island, and live in the water like the seals. Instead of wings, they have strong flippers, which assist them in swimming, but which afford them no means of flying. On the Falkland Islands three kinds of penguins are found, the *King*, the *Macaroni*, and *Jack-ass*. The *King Penguin* is as large as a goose, walks erect, its legs projected directly out behind; it stands upright, and at a distance resembles a man. The breast is white, head and back nearly black, mandibles tapering and sharp at the points, long stripes of red feathers, resembling eyebrows, over each eye, running down 2 inches on the neck, giving the bird a very handsome appearance. The *Macaroni Penguin* is not more than two-thirds as large as the former. It is like the other, except the colour, which differs a little, being more white about its throat; and, instead of the red feathers over the eyes, it has a number of long fibres or feathers, resembling the long hairs round the mouth of a cat, giving it a macaroni look, from which it takes its name. The *Jack-ass Penguin* is so called from the noise it makes, and from its not being so handsome as either of the other kinds. Its note nearly resembles the bray of an ass. It does not differ much, in size and colour, from the Macaroni, but is rather smaller. They go on shore at night, male and female, and make the most disagreeable noise that can be imagined.†

---

* A valuable and instructive volume, published at New York in 1832.

† Narrative of Captain Amaso Delano, 1817.

The *Port Egmont Hen* of Captain Cook is a bold rapacious bird, with a crouching vulture-like appearance, usually prowling upon the beach in search of prey. The *Larus fuscus*, or *Black-headed Gull*, is a graceful and elegant creature, which moves with all the dignity and ease imaginable.

The *Stormy Petrel*, or *Mother Carey's Chicken* of the sailors, is found in great numbers at South Shetland. This little creature is perpetually on the wing, skimming over the troubled surface of the sea as the swallow over the placid lake, hovering over the water which contains its prey, and buoying itself up now and then, keeping aloof from the waves by the pattering of its little web-feet and long legs, ever avoiding to alight on the ocean, whence it obtains food. It wanders over the stormy waves; its only home is the boundless air.

The *Cape Pigeons*, seen occasionally in all parts of the Southern Ocean, are constant and unwearied attendants of ships on the longest voyages, and are frequently seen at more than 2,000 miles from land. The *Procellaria nivea*, or Snowy Blue-nosed Petrel, is common at South Shetland; and the *Procellaria gigantea*, commonly called the *Nelly*, a large grey bird of voracious habits. The latter stands about 16 inches high, and its spread from tip to tip is about 5 feet. This bird has a strong musky odour. The *Pelicanus graculus*, or Blue-eyed Shag, and *Vaginalus alba*, or *Sea Pigeon*, of which excellent pies are made, complete the list of the feathered tribe in this region. The last congregate in large flocks, and being tame, are easily approached and knocked down with a stick. The extreme length of the bird is about 15 inches, and their spread, from tip to tip, 10 inches; the plumage is entirely white.

LUMINOSITY OF THE SEA.—The luminous appearance of the sea at night has often been the subject of wonder and reflection. This light, when excited by the ship's rushing through the water, assumes the form of brilliant stars, or round masses of greenish hue, frequently 18 inches in diameter. They float by the vessel in every part of the water which her bottom has touched, as deep as the very lowest part of the keel, and form behind her a long and fiery train. At other times, when the breeze is strong, and the billows break and foam, this light appears like fields of flashing fire. Twice, says Mr. Luccock, I have beheld this latter sight in all its splendour; the water was highly luminous, so far as the eye could reach, and the vessel seemed to be plunging her way over billows of liquid fire. In both instances the night was dark and lowering; and the brilliance of the water formed a grand but awful contrast with the black concave above us. When daylight returned, all this heatless splendour was eclipsed, and the sea exhibited, to a superficial view, only a more dingy colour than usual; to a more close examination it presented myriads of hemispherical bodies of the medusa tribe.

This luminous appearance arises from the presence of several kinds of animated beings, which have the power of emitting a phosphorescent light. This is evident from the multitude of them which may be taken out of the sea, and still appear lucid and active. Another great cause may probably be found in the disorganization and putrefaction of animal substances; this light abounding on all beaches where the refuse of large cities is discharged. Friction, in most cases, seems to assist in the production, if it be not in all essential to the existence, of this brilliancy. The slight agitation of the water, occasioned by the action of a steady breeze upon its surface, is often sufficient for the purpose; and in cases where plants are taken up, inhabited by minute animals, exposure to the passing air alone seems to be enough.

That this luminous quality is not confined to the surface of the water, where, for the most part it appears in the English Channel and North Sea, is evident to all who have passed the tropics, and may be clearly proved to those who have not; for the shark, when he has taken the bait at night, and finds himself hooked, generally plunges downward, if line enough be given, many fathoms below the bottom of the vessel, and is visible even there by the light which he creates around himself, while floundering in the water. That the light in question does not proceed from his own body, but from the water which he agitates, or rather the matter which it contains, is manifest; because the larger living fishes, as they dart around and beneath us during the obscurity, leave behind them long lucid trains, just of the same kind, and in the same manner, as the vessel herself does.

This *milky* appearance of the sea water, proceeding from some phosphorescent substance contained in solution, is one peculiarity of the salt water of the sea; for if there was more salt contained in it, animal substances, it is probable, would not sufficiently decompose to produce this luminosity; and, also, this phenomenon is never observed in fresh water. The experiments of Mr. Canton, on phosphorescent substances, have arrived at this conclusion, and much of the luminous appearance of the ocean may be safely referrible to this cause.*

For Commodore Krusenstern's remarks on the phosphorescent insects, see the Memoir on the Atlantic, 8th edition, page 240. The milky whiteness of the sea, described by Captain Tuckey, has been seen in other places, heretofore noticed. Dr. Francis Buchanan has given a particular description, from its appearance in the Indian Ocean, between the Seychelles and Bombay, lat. 6° 32′ N., lon. 61° 25′ E., 31st July, 1785. That description is as follows: "About 7^h 15′ p. m., the sea was observed to be remarkably white; the sky was everywhere clear, except around the horizon, where, for about 15 degrees, it was covered with a dark haze, as is usual in such latitudes. The whiteness gradually increased till 8^h 30′; the sea was then as high coloured as milk, very much resembling the milky way in the heavens, the luminous appearance of the sea resembling the brighter stars in that constellation. It continued in this condition till past midnight, and disappeared only as daylight advanced. The whiteness prevented us from being able to see either the break or swell of the sea, although both were considerable, as we knew from the motion of the ship and the noise. There was much light upon deck, as we could discern all the ropes much more distinctly than usual. We drew several buckets of water, in which, even when at rest, there appeared a great number of luminous bodies. The bulk of them did not appear to be more than a quarter of an inch in length, and nearly as much in breadth. Some, however, were 1¼ inches long, and of the same breadth as the others. These were seen to move in the same manner as a worm does in water. When taken upon the finger they retained their shining faculty even when dry. When brought near to a candle their light disappeared, but by minute attention, an extremely fine white filament could be observed and lifted upon the point of a pin. It was of an uniform shining colour and form, and about the thickness of a spider's thread. In a gallon of the water there might be about four hundred of these animals emitting light. The water itself, when in the bucket, had a natural appearance. The atmosphere was seemingly free from fog. The stars were bright, and there was no moonlight."

Observations.—The medusæ and animalculæ, which occasion the usual luminous appearance of the sea, emit light mostly when strongly agitated; and hence appear chiefly when close by the sides of the ship, or when any large fish passes swiftly, or when a bucket of water is drawn, and the water is suddenly poured out. In doing this, I have often observed that one of the animalcules stuck to my hand, and shone for a little; but as my hand dried the light disappeared, so that I never could bring the animal to a light so as to discover it by a magnifying glass. So much seems necessary to explain what I observed on the 31st of July, 1785, when the luminous animals were not only larger and more numerous, but also emitted a stronger light than usual.

In the year 1805, in returning from St. Helena to England, a little North from the equinoctial line, and at no very great distance from the coast of Africa, I had an opportunity of seeing a still more splendid appearance of the luminous animalcules. Soon after dark in the evening, it being nearly calm, we saw numerous lights at a distance, like the lamps of a great city. The lights gradually approached the frigate, and on reaching us appeared to arise from a great many large fishes (albicores) sporting in the water, and agitating the animalcules so as to excite their luminous powers. The Marquis Wellesley, Sir George Cockburn, Sir Colin Campbell, and several other gentlemen of distinction, were witnesses of this splendid phenomenon, which was not, however, accompanied by the milky appearance.†

Of the MOLLUSCÆ or MEDUSÆ (vulgo *Sea-Blubber*) there are said to be 44 species, consisting of a tender gelatinous mass, of various figures, most of which, by their phosphoreous quality, shine with great splendour in the water. They are described, by naturalists, as the second order of the Linnæan class *Vermes*. In the Supplement to the *Nautical Magazine*, 1834, is a description of them, as taken up in different parts of the ocean, with an engraving, exhibiting the curious figures of 16 different species, and which, therefore, is recommended to the notice of the reader.

Mr. Webster says, "During the long calms by which we were delayed in the vicinity of the Equator, I had an opportunity of examining several kinds of medusæ, or the sea-blubber. One day, while some of our crew were bathing in a sail, secured for the purpose by the side of the vessel, several of them were severely stung by these medusæ; and Mr. Miers, the carpenter, was so much injured by them as to be unable to swim. He suffered much pain and irritation in consequence, but nothing further. I have frequently handled them, and immediately afterwards, on applying my hands to my lips and face, have experienced some degree of pain; from which I am inclined to believe that it proceeded from the secretion of some acrid matter, rather than from any electric property. I contracted a disease on my hands, much resembling the itch, in consequence of handling the medusæ and the *Physalis*, or as it is commonly called, the *Portuguese man-of-war.*'

---

* See Naut. Mag., Aug., 1843, p. 514.

† Edinb. Phil. Journal, Vol. V. p. 303.

"*Medusæ*, or blubber, are generally supposed to consist of slimy gelatinous matter, but they are merely hydrophanes, or water cells, analogous to the vitreous humour of the eye; for, when punctured and hung up to drain, the water runs from them, and leaves an almost impenetrable shred of membrane; and yet this lives, and is capable of considerable motion."—Vol. I., p. 22.

Mr Webster adds, "In the early part of December, 1828, in the Harbour of Staten Island, where the ship was then lying, the water was covered with medusæ, and on the following night the most brilliant illumination ensued. In size these medusæ varied from 1 to 8 inches long, and were bell-shaped, or like a mitred cone, but frequently assuming different figures."

On the shores of Staten Island, "I have sat in silent contemplation of the wild scenery around me, till startled from my reverie by the encroaching waves of the returning tide. It is a glorious sight to observe the fecundity of nature, and the boundless profusion of the Almighty's works, which gives to every drop of water its appropriate being! All teems with existence, and is crowded with inhabitants!"

In lat. 2° 10′ N., lon. 15° 42′ W., 26th of April, 1824, at 9ʰ *p.m.*, the sea appeared uncommonly luminous. *Captain Livingston*, in the brig *Jane*, was then on his way towards Valparaiso, and his remarks follow:—"A multitude of molluscæ were floating past, of a quadrilateral form, 2½ inches long, 1¼ broad, and nearly half an inch thick; with an aperture, open at the front end, two-thirds of the length; many were caught, and when gently pressed edgewise, a good deal of water ran from the aperture, and they remained of a round form, rather inclining to conical; not unlike a thimble protracted until its length becomes double, in proportion to its diameter. They were very luminous: the light they emitted seemed voluntary, and was of a bluish colour, alternating with white. Their appearance was jelly-like, in the light of a candle in the cabin, something like the *sepia*, or cuttle-fish, and having much of the same jelly-like appearance. There were tubercles on them, very irregularly placed, and each seemed to be a little spark of light; as if the light was principally, if not entirely, emitted from the tubercles. They were perfectly innoxious: no uneasy sensation being experienced either on handling them or afterward.

"I have been thus particular in my description of them, because I never saw any like them before nor since, nor have I been able to meet a single individual who had, though I have attempted to describe them to many old Brasilian traders.

"Their general colour, exclusive of their luminosity, seemed a light greyish blue or bluish grey, something like starch, with a little Prussian blue mixed in it."

On the night of the 30th of May, 1828, in H.M.S. *Chanticleer*, near the Cape Verde Islands, at about 10 *p.m.*, the vessel sailing through the water at the rate of about 5 knots, the weather clear and the stars shining brightly, "Our attention was suddenly attracted by a great number of dolphins about the ship, and darting about in all directions with the swiftness of an arrow. The water was extremely brilliant, and appeared to be a sea of stars, so numerous were the specks of light; and the wake of the vessel, as she passed through it, was marked by one continued train of light. But beautiful as this was, we had been in some degree accustomed to it, and our attention was directed to the dolphins. We could distinctly see their whole form to a considerable depth below the surface of the water, from the bright light which they emitted, and were delighted with their gambols. A train of vivid light, not unlike that left by a rocket in its flight, but more continuous, suddenly appeared, and marked the dolphins to be in pursuit of prey."

DISCOLOURED WATER.—Mr. Luccock says, "In fine weather, near the coast of Brasil, the ship frequently falls into *patches of water*, which exhibits a *brown and dirty appearance*, for several miles in extent. Strangers are apt to suppose that they are on the edge of a shoal; and more than once, he adds, I have seen the helm put hastily down, in order to avoid the supposed sand-bank. Yet the brownness of the water arises from the spawn of fishes; and, when examined by a microscope, or powerful lens, is found to be mingled with vast numbers of the small fry, which have just broken into active existence. They seem to have been deposited by their parents during the winter months; for I have noticed them from June to November; but not in March, April, nor May. They probably serve as food for those fishes which are more fully grown, or the ocean soon would be overstocked."[*]

Upon this passage, Lieutenant A. H. Bisschop Greevelink remarks, "I should question, with all deference, whether the depth of water, in such places, was tried to a sufficient degree of certainty.

"On our passage from the West Indies to Europe, in July, 1837, at about four in the afternoon of the 7th, a streak was observed on the surface of the sea, exactly in the same manner as Capt. K. describes; and at the moment we passed over it, the lead was hove in a very proper manner, without finding bottom; but having lowered the boat, soundings were found to exist, although in more than 30 fathoms water. The latitude, computed from observations taken at noon, was 21° 12′ N., and longitude, by chronometer, 58° 42′ W."—See further on this subject, Colombian Navigator, Vol. III. p. 32.

Although it is undoubtedly the case that discoloured water is an indication of shoal water, still in almost every long voyage some of this phenomenon is met with, far beyond the limit of soundings. We will subjoin a few extracts from the Journal and Remarks[†] of Charles Darwin, Esq., M.A., Sec. Geol., &c., on this subject.

"March 18th, 1842, we sailed from Bahia. A few days afterwards, when not far from the Abrolhos islets, my attention was called to a discoloured appearance in the sea. The whole surface of the water, as it appeared under a weak lens, seemed as if covered with pieces of chopped hay, with their ends jagged. One of the particles measured .03 of an inch in length, and .009 in breadth. Examined more carefully, each is seen to consist of from twenty to sixty cylindrical filaments, which have perfectly rounded extremities, and are divided at regular intervals by transverse septa, containing a brownish green flocculent matter. The filaments must be enveloped in some viscid fluid, for the bundles adhered together without actual contact. I do not know to what family these bodies properly belong, but they have a close resemblance in structure with the confervæ which grow in every ditch. These simple vegetables, thus constituted for floating in the open ocean, must in certain places exist in countless numbers. The ship passed through several bands of them, one of which was about 10 yards wide, and, judging from the mud-like colour of the water, at least 2¼ miles long. In almost every long voyage some account is given of these confervæ. They appear specially common in the sea near Australia. Off Cape Leeuwin, I found some very similar to those above described; they differed chiefly in the bundles being rather smaller, and being composed of fewer filaments. Captain Cook, in his Third Voyage, remarks, that the sailors gave to this appearance the name of sea sawdust.

"I may here mention, that two days preceding our arrival at the Keeling Islands, in the Indian Ocean, I saw in many parts masses of flocculent matter, of a brownish green colour, floating on the sea. They varied in size, from half to 3 or 4 inches square; and were quite irregular in figure. In an opaque vessel they could barely be distinguished, but in a glass one they were clearly visible. Under the microscope, the flocculent matter was seen to consist of two kinds of confervæ, between which I am quite ignorant whether there exists any connexion. Minute cylindrical bodies, conical at each extremity, are involved in vast numbers, in a mass of fine threads. These threads have a diameter of about $\frac{2}{3000}$ of an inch; they possess an internal lining, and are divided at irregular and very wide intervals by transverse septa. Their length is so great, that I could never with certainty ascertain the form of the uninjured extremity; they are all curvilinear, and resemble in mass a handful of hair coiled up and squeezed together. In the midst of these threads, and probably connected by some viscid fluid, the other kind, or the cylindrical transparent bodies, float in great numbers. These have their two extremities terminated by cones, produced into the finest points: their diameter is tolerably constant between .006 and .008 of an inch; but their length varies considerably from .04 to .06, and even sometimes to .08. Near one extremity of the cylindrical part, a green septum, formed of granular matter, and thickest in the middle, may generally be seen. This, I believe, is the bottom of a most delicate, colourless sack, composed of a pulpy substance, which lines the exterior case, but does not extend within the extreme conical points. In some, small but perfect spheres of brown granular matter supplied the place of the septa; and I observed the curious process by which they were produced. The pulpy matter of the internal coating suddenly grouped itself into lines, some of which assumed a form radiating from a common centre; it then continued with an irregular and rapid movement to contract itself, so that, in the course of a second, the whole was united into a perfect little sphere, which occupied the position of the septum at one end of the now quite hollow case. The appearance was as if an elestic membrane—for instance, an Indian rubber ball—had been distended with air and then burst, in which case the edges would instantly contract and shrink up towards a point. The formation of the granular sphere was hastened by any accidental injury. I may add, that frequently a pair of these bodies were attached to each other, cone beside cone, at that end where the septum occurs. When floating uninjured in the sea, the formation of the spherical gemmules perhaps only takes place, when two of the plants (or rather animal, according to Bory St. Vincent,) thus become attached and married to each other. Nevertheless, I certainly witnessed this curious process in several individuals, when separate, and when there was no apparent cause of disturbance. In any case it does not seem probable, from the fixed structure of the septum, that the whole of the granular matter is transferred from one to the other body, as with the true conjugatæ.

---

[*] On the 6th of December, 1815, Captain Kotzebue, on his voyage around the world, observed on the surface of the sea, near the Island of St. Catherine, a serpentine streak, about two fathoms broad, of a dark brown colour, which extended as far as the eye could reach. Upon examination, it was found to be occasioned by an innumerable quantity of small crabs, and the seeds of a marine plant or weed, [qu. *fucus natans*, or *Gulf weed*?] supposed to grow at the bottom of the sea.—*Kotzebue*, Vol. I., p. 113.

[†] *Narrative of the Voyages* of the Adventure and Beagle, 1832—1836, Vol. III.

"I will here add a few other observations connected with the discolouration of the sea from organic causes. On the coast of Chile, a few leagues North of Concepcion, the Beagle one day passed through great bands of muddy water; and again, a degree South of Valparaiso, the same appearance was still more extensive. Although we were nearly 50 miles from the coast, I at first attributed this circumstance to real streams of muddy water brought down by the River Maypo. Mr. Sulivan, however, having drawn up some in a glass, thought he distinguished, by the aid of a lens, moving points. The water was slightly stained as if with red dust; and after leaving it for some time quiet, a cloud collected at the bottom. With a lens, of one-fourth of an inch focal distance, small hyaline points could be seen darting about with great rapidity, and frequently exploding. Examined with a much higher power, their shape was found to be oval, and contracted by a ring round the middle, from which line curved little setæ proceeded on all sides; and these were the organs of motion. One end of the body was narrower and more pointed than the other. According to the arrangement of Bory St. Vincent, they are animalcula, belonging to the family of Trichodes: it was, however, very difficult to examine them with care, for almost the instant motion ceased, even while crossing the field of vision, their bodies burst. Sometimes both ends burst at once, sometimes only one, and a quantity of course brownish granular matter was ejected, which cohered very slightly. The ring with the setæ sometimes retained its irritability for a little while after the contents of the body had been emptied, and continued a wriggling, uneven motion. The animal, an instant before bursting, expanded to half again its natural size; and the explosion took place about fifteen seconds after the rapid progressive motion had ceased: in a few cases it was preceded for a short interval by a rotatory movement on the longer axis. About two minutes after any number were isolated in a drop of water, they thus perished. The animals move with the narrow apex forwards, by the aid of their vibratory ciliæ, and generally by rapid starts. They are exceedingly minute, and quite invisible to the naked eye, only covering a space equal to the square of a thousandth of an inch. Their numbers were infinite; for the smallest drop of water which I could remove contained very many. In one day we passed through two spaces of water thus stained, one of which alone must have extended over several square miles. What incalculable numbers of these microscopical animals! The colour of the water, as seen at a distance, was like that of a river which has flowed through a red clay district; but under the vessel's side it was quite as dark as chocolate. The line, where the red and blue waters joined, was distinctly defined. The weather, for some days previously, had been calm, and the ocean abounded, to an unusual degree, with living creatures. In Ulloa's voyage an account is given of crossing, in nearly the same latitude, some discoloured water, which was mistaken for a shoal: no soundings were obtained, and I have no doubt, from the description, that this little animalcule was the cause of the alarm.

"In the sea around Tierra del Fuego, and at no great distance from the land, I have seen narrow lines of water of a bright red colour, from the number of crustacea, which somewhat resemble in form large prawns; the sealers call them whale-food. Whether whales feed on them I do not know; but terns, cormorants, and immense herds of great unwieldly seals, on some parts of the coast, derive their chief sustenance from these swimming crabs. Seamen invariably attibute the discolouration of the water to spawn; but I found this to be the case on only one occasion. At the distance of several leagues from the Archipelago of Galapagos, the ship sailed through three strips of a dark yellowish, or mud-like water; these strips were some miles long, but only a few yards wide, and they were separated from the surrounding surface by a sinuous yet distinct margin. The colour was caused by little gelatinous balls, about the fifth of an inch in diameter, in which numerous spherical ovules were embedded; they were of two distinct kinds, one being of a reddish colour and of a different shape from the other. I cannot form a conjecture as to what two kinds of animals these belonged. Captain Colnett remarks, that this appearance is very common among the Galapagos Islands, and that the direction of the bands indicates that of the currents; in the described case, however, the line was caused by the wind. The only other appearance which I have to notice, is a thin oily coat on the surface, which displays iridescent colours. I saw a considerable tract of the ocean thus covered on the coast of Brasil; the seamen attributed it to the putrefying carcase of some whale which was probably floating at no great distance. I do not here mention the minute gelatinous particles which are frequently dispersed throughout the water, for they are not sufficiently abundant to create any change of colour.

"There are two circumstances in the above accounts which appear very remarkable: first, how do the various bodies which form the bands with defined edges keep together? In the case of the prawn-like crabs, their movements were as coinstantaneous as in a regiment of soldiers; but this cannot happen from anything like voluntary action with the ovules, or the confervæ, nor is it probable among the infusoria. Secondly, what causes the length and narrowness of the bands? The appearance so much resembles that which may be seen in every torrent, where the stream uncoils into long streaks, the froth collected in the eddies, that I must attribute the effect to a similar action either of the air or sea. Under this supposition, we must believe that the various organized bodies are produced in certain favourable places, and are thence removed by the set of either wind or water. I confess, however, that there is very great difficulty in imagining any one spot to be the birthplace of the millions of millions of animalcula and confervæ; for whence come the germs at such points?—the parent bodies having been distributed by the winds and waves over the immense ocean. But on no other hypothesis can I understand their linear grouping. I may add, that Scoresby remarks that green water, abounding with pelagic animals, is invariably found in a certain part of the Arctic Sea."

INDICATIONS OF WIND.—It has been stated that sometimes such swarms of flies are blown off the coast about the entrance of the Rio Plata, as to resemble a small dense black cloud, which is invariably followed by one of the gales or hurricanes denominated *Pamperos*, from blowing over the extensive Pampas or plains.

In the Eastern Seas swarms of large flies sometimes come on board vessels, and a typhoon is sure to follow. An eye-witness said, "There were three Indiamen of us in company; typhoon flies flew on board our ship, the weather was very fine, and no appearance of a gale, and all of us were surprised when our old experienced captain immediately set us to work to send down royals, topgallant-masts, &c., which we had scarcely accomplished, when a tremendous hurricane came on. We were obliged to keep the ship right before it for a long time. When it came on, our commander was on the forecastle, giving some orders, and the force of the wind was such that he was unable to return to the quarter deck for about four hours.

"The other ships suffered severely, losing topmasts, &c., but we escaped, owing to the experience of our captain, and his prudent measures, which commenced as soon as ever the flies were noticed."

Mr. Luccock says, In the latitude of 34° South, and fully 200 miles from land, we found the rigging covered, one morning, with a multitude of small insects, some of them *very beautiful.* We had no doubt of their being brought from the land by a N.W. wind, *which then began to blow* fresh, but wondered at the distance to which they had been wafted. They were the precursors of one of the most durable gales which I ever experienced: it lasted ten days, with more or less violence, during which we drifted to 36⅓° South.—*Luccock's Brasil.*

On this subject *Mr. Darwin* says, "Several times when the ship has been some miles off the mouth of the Plata, and at other times when off the shores of Northern Patagonia, we have been surrounded by insects. One evening, when we were about 10 miles from the Bay of San Blas, vast numbers of butterflies, in bands or flocks of countless myriads, extended as far as the eye could range. Even by the aid of a glass, it was not possible to see a space free from butterflies. The seamen cried out, 'It was snowing butterflies;' and such in fact was the appearance. More species than one were present, but the main part belonged to a kind very similar to, but not identical with, the common English *Colias edusa*. Some moths and hymenoptera accompanied the butterflies, and a fine Calosoma flew on board. Other instances are known of this beetle having been caught far out at sea; and this is the more remarkable, as the greater number of the Carabidæ seldom or never take wing. The day had been fine and calm, and the one previous to it equally so, with light variable airs. Hence we cannot suppose that the insects were blown off the land, but we must conclude that they voluntarily took flight. Before sunset, a strong breeze sprung up from the North, and this must have been the cause of tens of thousands of the butterflies and other insects having perished. The most remarkable instance I ever knew of an insect being caught far from land, was that of a large grasshopper (*Acrydium*), which flew on board, when the Beagle was to windward of the Cape Verde Islands, and when the nearest point of land, not directly opposed to the trade wind, was Cape Blanco on the coast of Africa, 370 miles distant.

"On several occasions, when the vessel has been within the mouth of the Plata, the rigging has been coated with the web of the gossamer spider. One day (November 1st, 1832), I paid particular attention to the phenomenon. The weather had been fine and clear, and in the morning the air was full of patches of the flocculent web, as on an autumnal day in England. The ship was 60 miles distant from the land, in the direction of a steady though light breeze."*

MAGALLANIC CLOUDS, &c.—Of the numerous spots called *Nebulæ*, in the *Northern* celestial hemisphere, some consist of clusters of telescopic stars, others appear as luminous spots of different forms. Dr. Herschel has given catalogues of 2,000 *Nebulæ* and clusters of stars which he himself discovered; and he also discovered other phenomena which he called *Nebulous Stars*, that is, stars surrounded with a faint luminous atmosphere of large extent. The *Via Lactea*, or *Milky Way*, consists entirely of stars, situated at such distances as to be distinguished only by telescopes of extraordinary power.

In the southern hemisphere, also, are Nebulæ and Nebulous Stars, of the nature and appearance of the Milky Way, and which have hitherto borne the name of the *Magallanic Clouds*. These have been considered as a small portion only of the Nebulæ of the South, and they rank with the most singular and remarkable phenomena to be seen from the surface of the ocean.

Mr. Luccock has said, that "Sailors, or at least persons fit to be entrusted with the care of a vessel, and having the direction of her course, must necessarily look every day to the heavens; and may be allowed, without presumption, to extend their views even to distant spheres. I have frequently been surprised at the fact, that nearly all such mistake the MAGALLANIC CLOUDS; and instead of the *nebulæ*, distinguished by that name among astronomers, point to two *black patches* which are much larger than the nebulæ themselves. They are so black as to be distinctly visible by every one; and naturally prompt us to ask, how is it that these obscure spots exist? how is it that, in these parts of the heavens, there should be such an obvious and well-defined absence of light? Whence comes the luminous hue so greatly diffused as to render these patches remarkable? They exhibit no stars to the naked eye, and very few are visible with a small telescope. Some of a similar kind, but of smaller extent, and various in their degrees of blackness, exist in the southern half of the *Via Lactea* itself; while nothing like them, that I have been able to notice, is found among the northern constellations."

MIRAGE.—The *Mirage*, or effect of unequal refraction in the atmosphere, is frequently seen on the African coasts. Seamen are now well acquainted with this phenomenon, which is produced by the differences between the temperatures of the water and the air, and by that of the several strata or veins in the atmosphere. In the Deserts the same effect is produced by the difference of refraction in the atmosphere between the air and the sands. Captain Horsburgh, in speaking of Table Bay, near the Cape of Good Hope, says, " In this bay it is difficult to get rates for chronometers on shipboard in the fair weather season; for correct altitudes of the sun cannot be obtained, the refraction is so mutable near the horizon. During seven days' stay here I took nearly 100 sets of forenoon and afternoon altitudes of the sun, to *correct the rates* of seven chronometers, but did not get their rates very exact. Objects in the horizon, at the entrance of the bay, were sometimes reflected double; a picture of a vessel under sail was seen distinctly in the atmosphere above her, and other objects were reflected in various ways. It is, therefore, advisable, if a ship remain several days at this place, to take the chronometers on shore, where their rates may be corrected by altitudes taken with an artificial horizon, or in a basin of water, when there is little wind.

---

* *Voyages of the Adventure* and Beagle, Vol. III., p. 185.

"To the westward of the Cape, in the summer months, the atmosphere is at times remarkably clear; the planet Venus, and even Jupiter, may be often seen at mid-day. At about 1 degree West from Table Bay, at 2ʰ p. m., January 27th, 1798, when the altitude of the sun was about 55°, then shining bright, I observed the latitude very correctly by the planet Venus, on the meridian. This luminary was bright, and distinctly visible to the eye, without a telescope, during most part of the day."*

In northern Africa the traveller is frequently deceived by the mist and apparitional lake, called by the Arabs, *El Sirraub*. This illusory lake, even at a short distance, has the most perfect resemblance to a vast sheet of water, with trees and other objects reflected as in a mirror. The traveller quickens his steps to reach the place where he hopes to quench his thirst, and arriving at the imaginary pool, feels all the bitterness of disappointment.

The most extraordinary instances of mirage are, however, to be seen in the higher latitudes, and as shown in Captain Scoresby's " *Journal of a Greenland Voyage*," 1822.

TEMPERATURE and DENSITY of SEA WATER.—According to Colonel Sabine, the greatest density of sea water, resulting from its temperature, takes place at 42°, or thereabout; if heated above, or cooled below, that amount, it is rendered specifically lighter, and in the natural progression must be found incumbent on water of 42°.

According to Captain Sir James C. Ross, this maximum density is at a much lower temperature, at 39° 5′ Fahr.; for being in lat. 66° 34′ S. on January 3rd, 1842, he found the surface at 36°, and the temperature *increasing* regularly to 39° 5′ at 945 fathoms, and that this zone of equal temperature and maximum density was in the South hemisphere, at a mean latitude of 56° 26′. This temperature of the maximum density (as well as that of Colonel Sabine) does not at all accord with previous speculation; and, it is manifest, requires more extensive observation ere we can decide on its accuracy.†

In the existing state of the ocean, according to Colonel Sabine, the temperature of 42° may be considered as the mean heat of the surface of the sea in a parallel between the latitudes of 65° and 70° North; from whence the influence of external causes renders the surface colder toward the pole, and warmer toward the Equator, and in both cases specifically lighter than water at 42°.

In approaching the Equator (or rather more generally, the space between the tropics to every part of which the sun is periodically vertical) the warmth of the surface water increases, and the heat penetrates to greater depths; in descending beneath the surface the temperature progressively decreases and the density augments, until the term of 42°, or thereabout, is reached; beneath which no farther alteration of either takes place, dependent on influences on the surface. It was to ascertain the depth at which the term of this progression might be met with in the tropics, that the following experiment was made by Colonel Sabine.

In the Caribbean Sea, lat. 20½° North, lon. 83° West, nearly midway between the

---

* Mr. Webster says that the *Mirage*, or reflected pictures in the atmosphere, is of frequent occurrence at the Cape. Robben Island and the shipping in the bay were seen in the sky several times during the stay of the *Chanticleer*, forming a picture of the inverted images depicted in the vapour of the atmosphere; and once a considerable part of the bay and the shore formed a beautiful aerial picture, which lasted about one quarter of an hour.

† *See Directory for the Pacific Ocean*, Part II., p. 1325.

Cayman and Cape Antonio, 13th November, 1822, a Six's self-registering thermometer, inclosed in an iron cylinder, was lowered to a depth exceeding 1,000 fathoms. When hauled in, the thermometer had registered 45°·5, the surface being 83°; whence it may be reasonably inferred that 100 fathoms more line would have sunk the thermometer to 42°, the rate of cooling being, on the average of the whole depth, about 28 or 29 fathoms to a degree of Fahrenheit; and thus the sea water would have been found at its maximum of density, dependent on temperature, at about 1,200 fathoms below the surface.

In lat. 3° 20′ South, lon. 7° 39′ East (about 2¼° from the African coast), Captain Wauchope, in H.M.S. *Eurydice*, gained water from the sea at the depth of about 1,300 fathoms. The water, when the thermometer was brought to the surface, stood at 42°. The temperature of the surface water, at the same time, was 73°.

In a previous experiment of the same kind, which Captain Wauchope made in lat. 10° North, lon. 25° West, the quantity of rope veered out was 966 fathoms, the temperature of the surface water was 80°, and the inclosed thermometer showed 51°, corresponding to a diminution of temperature averaging 1° in about 29 fathoms, being very nearly the same ratio as appeared by Colonel Sabine's experiment in the Caribbean Sea.*

In October, 1823, and in latitude 5° North, the Russian Captain *Otto von Kotzebue*, on his passage toward Rio Janeiro, during a calm, drew up water from a depth of 500 fathoms, by means of a machine invented by *M. Parrot*, which proved to be of the temperature of 44°, while that of the surface water was 89°, and it seemed comparatively to have the temperature of ice. The machine weighed 40lbs, and contained about a pailful of water; but the pressure of the column of water over it was such, that six seamen, with a windlass, were hardly able to draw it up; and, in an attempt to sink it to 1,000 fathoms, the line broke and the machine was lost.

During the passage of H.M.S. *Chanticleer* through the variables, North of the Line, in June, 1828, the mean temperature of the air was 80° and the surface water of the ocean the same. Temperature of rain water, 76° to 78°. Heavy rains cooled the air, brought down the mercury 2° or 3°, and diminished the temperature of the surface water. In a warm atmosphere thus saturated with moisture, mildew formed with great rapidity. The foresail and awning became permanently dyed of a sooty colour, from the mildew which formed upon them in the open air; and in the short space of twelve hours, wet or washed linen, that was hung up for the purpose of drying, soon became spotted with mildew; black silk handkerchiefs in the officers' drawers became covered with red and ash coloured spots; drawing paper was spoiled; shoes were covered with mildew, and in the space of a few hours were found with woolly filaments inside of them; the underside of the chairs were mildewed; damp clothes in a close place were quickly covered with fungi; the stains on the linen and cloth were permanent, and could not be effaced by washing, although the texture of the cloth was not injured.

During the calms the sounding lead was sent down to a depth of 400 fathoms, with Sykes's thermometer and Dr. Marcet's iron water-bottle attached to it. The surface water was invariably found to be at 80°, and at 400 fathoms below the surface it was 44°. The experiments were made in a fathomless sea, 100 miles northward of the Equator. The sea at night frequently broke with a phosphoric flash, like that of sheet lightning, but the scintillating appearance of the water was very much diminished.

DEPTH OF THE OCEAN.—This is a problem yet unsolved, which has recently received great attention; and the more especially since our American brethren have so earnestly entered into the field of hydrographical research. However, notwithstanding the numerous careful experiments which have been made, our conviction is, that they are all, or almost all, of a negative character; that is, that the enormous length of line run out in some cases does *not* show the true depth of the ocean.

---

* "Account of Experiments to determine the Figure of the Earth, by means of the Pendulum vibrating seconds in different latitudes, as well as on various other subjects of Philosophical Enquiry." By Captain Edw. Sabine, R. Art., F.R.S., &c., 4to. Murray, 1825.

The diminution of the polar, in comparison with the equatorial diameter of the earth, according to Colonel Sabine's experiments, combined with those of the French experimentalists, is one 289th part. Colonel Lambton, from his admeasurements in India (1822), gave it as one 310th. The respected and scientific Captain Mendoza de Rios as one 320th. The astronomers Delambre and Mechain, in 1799, as one 334th. Sir Isaac Newton, by theory, gave it as one 230th. Upon the whole, it seems to be about one 300th part; and this proportion of the two diameters will approximate sufficiently to the truth for all practical purposes. A very important question is, whether the flattening is the same in both hemispheres; but the very trifling difference hitherto found seems to decide that it is sensibly the same.

The general result of the numerous pendulum experiments of Captain Foster accord, in a remarkable degree, with those of Colonel Sabine; the former giving 289.48, and the latter 288.40. Mean, 288.94.

This doubt we have expressed and assigned reasons for in other places,[*] and may here be briefly stated that the lead, in most cases, has apparently drawn out the line at very irregular intervals, which a spherical shot would not do, and that it is more than probable that the bottom has been reached very much within the depth apparently shown by the sounding line. For if it should pass through one or more opposing submarine streams, such as those described in the Atlantic Memoir, 10th Edition, pp. 260, 261, and which it is tolerably certain that they would do in some greater or less degree, this movement of the water would carry the line off the reel with double its velocity, or, in many cases, with a speed quite equal to that which it would be drawn by the sounding weight. Also that the impact of a moving mass of water upon a line whose sectional area is equal to 50 square feet per 1,000 fathoms would be vastly greater than the force exerted upon it by a sounding weight, which would consequently be drifted away by the line. The friction of a tortuous line, its buoyant power, and other reasons also, may be brought forward to invalidate the conclusions drawn from these experiments.

It may, therefore, be stated that when the line at these great soundings does not run out with a regularly decreasing rate, that some other cause is in operation to cause this irregularity, and that it does not show the true depth. Besides this, the *exact* drift of the ship or boat should be taken into account, as any motion from the exact perpendicular will cause the resulting depth to be not the hypothenuse of a right angled triangle, whose base is equal to the drift, but the perpendicular to the base and a *curve* formed by the sounding line.

In the *Atlantic Memoir*, 10th edition, p. 529, this subject is given more at length, and details of numerous experiments will there be found; to them may be added some made by Capt. *Sir Edward Belcher*, in H.M.S. Samarang, off the W. coast of Africa, which are recorded in the Nautical Magazine, 1843, p. 796. The results of these, it will be seen, coincide with those which are there given.

"On the 20th of March, 1843, being in lat. 0° 24′ N., lon. 10° 37′ W., an attempt was made to obtain soundings. The following were the rates at which the line passed off the reel. It broke or ceased to descend (suddenly) at 3,065 fathoms.

Fathoms.	h.	m.	s.	
0	2	57	38	
100		59	8	
200	3	0	56	
300		3	2	
400		5	18	
500		7	23·2	
600		10	16·8	
700		12	51·2	
800		15	51·2	
900		19	15·2	
1000		22	33·2	1000 24m. 55·2s.
100		26	24	
200		32	10	
300		36	57·2	
400		42	24	
500		48	27·2	
600	3	53	35·2	
700		59	12	
800	4	3	54	
900		8	24	
2000[†]		14	7·2	2000 51m. 34·0s.
100		18	11·2	
200		22	15·2	
300		29	30	
400		39	18	
500		44	33·2	
600		49	57·2	
700		54	39.2	
800	5	0	26·0	
900		6	24	
3000		11	0	3000 56m. 52·8s.
3065				

The first weight was one-hand lead of 12lbs. The second one of similar weight, which does not appear to have materially accelerated the last thousand fathoms.

On the 25th of March, 1843, in lat. 4° 14′ 35″ S., lon. 9° 37′ 39″ W. (500 m. southward of Cape Palmas), a weight of 14lbs. was attached, and struck soundings at 1,620 fathoms; but 5 fathoms were hauled in to bring it nearly vertical. No perceptible current, but the ship drifted about 1 mile to the south-west during the operation, which I attributed to the breeze and being hove to.

---

[*] See Atlantic Memoir, 1853, p. 529, and Jour. Roy. Geographical Society, Vol. xxiii., 1853.

[†] *Another lead sent down by messenger.*

Fathoms.	h.	m.	s.	
0	11	45	5·2	
100		46	25·2	
200		48	4	
300		49	52	
400		51	58	
500		54	18	
600		56	50	
700		59	16	
800	12	2	6	
900		4	40	
1000		7	34	1000 22m. 28·8s.
100		10	28	
200		13	52	
300		17	4	
400		20	40	
500		23	50	
600		27	34	
1615				

In this case the weight had an air bag attached, and was not allowed to sink rapidly for the first 50 fathoms; still it appears to have reached the 1,000 fathoms in less time than in the preceding experiment, and at 1,600 much earlier.

Thus in No. 1.—1000 fathoms 24 55·2 ... 1600 fathoms 55 57·2
2. ... ... 22 28·8 ... ... 48 28·8
Difference ... ... 2 26·4 ... ... 13 28·4
In case 1 the weight was lead 12 lbs.
2 ...... iron 14 lbs. enclosed in canvas.

On the 23rd the water bottle was sent down in lat. 2° 33′ S., lon. 8° 15′.

On the 13th of April, being becalmed in lat. 35° 50′ S., lon. 1° 54′ E. (840 miles westward of the Cape of Good Hope), another attempt was made at deep sea soundings, but the line parted without any surface strain at 1,270 fathoms. I shall not lose more line by any repetition until I have laid them up three strands. I then obtained temperatures at the undermentioned depths.

	300 fathoms	336	47·25 corrected.	
	400 ...	315	44·50	
	500 ...	331	41·50	
Surface by Standard 64° 5′	600 ...	312	51·25 ?	Current S.W. by S.
	700 ...	314	39·00	0·732 miles per hour.
	800 ...	322	42·50	
	900 ...	357	41·25	
	1000 ...	358	39·75	

(Signed) EDWARD BELCHER.

Captain Sir James C. Ross, in H.M.S. Erebus, also obtained soundings in this part; we subjoin the particulars of this experiment. It was in lat. 33° 21′ S., lon. 9° 4′ E. March 3rd, 1840.

"I have just obtained another deep sounding (in 2,677 fathoms), and although we have not yet been able to get down so far as I wished, and still hope to do, I am quite satisfied that if we get into any sea deep enough, we shall have no difficulty in accomplishing it. The weight employed was 540 pounds, and we had on the reel something more than 5,000 fathoms of line; the first 437 fathoms were a single strand of whale line; the rest was of two strands of three-yarn spunyarn; and the following are the times of each of the marks passing off the reel:—

				Intervals.	
Fathoms.	h.	m.	s.	m.	s.
Let go at	10	33	58		
50		34	23	0	25
100		34	53	0	30
150		35	22	0	29
200		35	54	0	32
250		36	26	0	32
300		37	3	0	37
350		37	40	0	37
400		38	20	0	40
477		39	32		
next 100		40	59		
200		*42*	*31*	*1*	*32*
300	10	44	8	1	37
400		45	48	1	40
500		47	28	1	40
600		49	14	1	46
700		51	2	1	48
800		52	58	1	56
900		54	56	1	58
1000		56	56	2	0
100		58	56	2	0
200	11	0	56	2	0
300		2	55	1	59
400		5	2	2	7
500	11	7	14	2	12
600		9	27	2	13
700		11	42	2	15
800		13	58	2	16
900		16	19	2	21
2000		18	44	2	25
100		21	11	2	27
200		23	37	2	26
——		——	——*		
Tot. 2677	11	29	39†		

* Stopped exactly at the mark.

† Time of sounding.

"Crozier took down the time of each mark passing off the reel; and when the weight touched the bottom, it stopped so suddenly, the boats' crews all called out, 'It is down.' We veered away 50 fathoms afterwards, and then hauled in again, but could not get an inch more than the mark at which it first struck. Nothing could be more satisfactory than this sounding, and it is the more so from showing very plainly that we have the means of getting soundings, however deep the sea may be, and I trust our next trial will be in deeper water. I have ordered the line to be again completed to 5,000 fathoms; but it would be useless to attempt it any more on this side of the Cape."

The foregoing will give sufficient idea of the details of these interesting experiments. But the great depths there recorded have since been far exceeded. Without including the great sounding of 5,700 fathoms, tried by Lieutenant Walsh, U.S.N., in the *Taney*, November 15th, 1849, in lat. 31° 59′ N., lon. 58° 43′ W., three others of still greater depth have been tried. One in the North Atlantic, by Lieutenant O. H. Berryman, U.S.N., in the *Dolphin*, February 12th, 1853, in the North Atlantic, in lat. 32° 55′ N., lon. 47° 58′ W., when 6,600 fathoms were veered out. The others were Lieutenant J. P. Parker, of the U.S. frigate *Congress*, April 4th, 1852, in lat. 35° 35′ S., lon. 45° 10′ W., when the cast was 8,300 fathoms; and the other by Captain Denham, of H.M.S. *Herald*, October 30th, 1852, in lat. 36° 49′ S., lon. 37° 6′ W., of 7,706 fathoms. The particulars of these soundings in the Ethiopic are best exhibited in a tabular form, for comparison, and are as follow:—

TIME OF RUNNING OUT.

Length of the Line in fathoms.	No. 1. Mar. 20, 1843 *Samarang*, Sir E. Belcher 12 lb. 0° 24′ N. 10° 37′ W.	No. 2. Mar. 25, 1843 *Samarang*, Sir E. Belcher 14 lb. 4° 14′ S. 9° 37′ W.	No. 3. Mar. 3, 1840 *Erebus*, Sir J. C. Ross, 540 lb. 33° 21′ S. 9° 4′ E.	No. 4. Mar. 3, 1848 *Erebus*, Sir J. C. Ross, 340 lb. 68° 40′ S. 12° 50′ E.	No. 5. April 4, 1852 *Congress*, J. P. Parker, 32 lb. shot, 35° 35′ S. 45° 10′ W.	No. 6. Oct. 30, 1852 *Herald*, Denham, 9 lb. 36° 49′ S. 37° 6′ W.
	Intervals. m. s.	Intervals. m. s.	Intervals. m. s.	Intervals. m. s.	Intervals. m. s.	Intervals. m. s.
300 to 800	12 49	12 14	6 28	6 59	8 45	14 20
800...1300	21 6	14 58	8 50	9 22	11 0	18 25
1300...1800	26 57		9 57	11 3	13 0	19 30
1800...2300	30 18		11 3	12 13	15 0	22 0
2300...2800	30 56			16 30	19 0	23 50
2800...3300				21 23	37 0	28 20
3300...3800				22 12	51 0	39 20
3800...4300					28 0	43 40
4300...4800					33 15	42 25
4800...5300					34 45	47 50
5300...5800					34 0	53 50
5800...6300					34 30	55 5
6300...6800					21 30	53 55
6800...7300					27 0	52 25
7300...7800					28 30	44 14
7800...8300					21 0	
	stopped at 3065 fath. in 2^{h} 13′ 22″	stopped at 1620 fath. in 0^{h} 42′ 29″	stopped at 2677 fath. in 0^{h} 55′ 41″	broke at 4000 fath. in 1^{h} 51′ 49″	8300 fath. in 7^{h} 7′ 15″	stopped at 7076 fath. in 9^{h} 24′ 45″

The particulars and references to many of these will be found in the *Nautical Magazine*, August, 1853, pp. 393 *et seq.*

SECTION III.

ON THE PASSAGES TO AND FROM BRASIL, PATAGONIA, AND CAPE HORN; ASCENSION, ST. HELENA, AND THE CAPE OF GOOD HOPE.

THE PASSAGE TO BRASIL, ETC.

The points recommended for crossing the Line, outward and inward, have been shown in the Book for the Atlantic Ocean; and the routes thence, considered as the most advantageous, are shown on the new Chart.

To the preceding notices on the Currents, &c., we add, from the communication of Captain Livingston, the following remarks made by Mr. Cubitt Springall, in the brig *Petty*, on a voyage to Pernambuco, in 1820.

Mr. Springall, in adverting to his passage outward, says, "I crossed the Equator on the 24th of May, in lon. 25° 26′. This, I am aware from experience, is the best track for a vessel bound to Brasil; or say from 25° to 28°. On the second day after crossing the Line, in lat. 2° 36′ S., we found, by observations taken by three quadrants, that the ship was from 40 to 50 miles to the southward of her reckoning, which, of course, was attributed to a current in a S.S.W. direction, which continued with the track of the ship to lat. 6° 36′ S., lon. 28°; then I found, by good observations, the current set equally as strong to the northward. On standing in, to make Pernambuco, with the southerly wind, which prevails from March to August, and being under the necessity of bringing up, I found the current to run at the rate of 3½ knots N.N.W. This was in 5 or 6 fathoms of water, about 30 miles to the northward of Pernambuco. The southerly current, which prevails from September to March, when the wind is from the northward, is not so strong as the northerly current.

"I sailed from Pernambuco on the 1st of August, and re-crossed the Line on the 6th, in lon. 20° 36′, and found a stronger northerly current till in lat. 6° N., which set the ship constantly to the northward and westward, from 25 to 30 miles per day."

Mr. John Luccock, in his very valuable and important volume on the Geography and Navigation of Brasil,[*] has the following remarks on the passage, which may be advantageously compared with those already given.

"After passing the Cape Verde Islands the mariner, who is bound to the southward, feels anxious about crossing the Line. Landmen, not aware of the circumstance, will probably be surprised to hear that, broad as the ocean is between the coasts of Africa and Brasil, a difficulty exists in clearing Fernando de Noronha and Cape St. Augustin. With a good chronometer on board I should run boldly on toward the American coast, being careful only to avoid falling to leeward of Cape St. Roque, and into the heavy current which sets close around it. Without a chronometer, or knowledge enough to use it with advantage, I should allow, from 17° of North latitude, a westerly drift, beginning with 5 miles for twenty-four hours, increasing the allowance until the latitude of 5° be attained, when it should be at least 20 miles a day. From that parallel to 13° South the drift will decrease, and then again become variable. If 9° South can be obtained without seeing the land, the navigator may generally proceed with confidence, even close in-shore, particularly in the months from October to March; for the daily land wind will carry him sufficiently out, while it blows, to render his passage easy and safe when the sea breeze returns; and close to the land he will find fewer calms than at the distance of 30 to 50 miles from it. Upon the coast of Brasil it may be taken, almost as a general rule, that the sea breeze blows nearly at right angles to the line of the shore, reckoning from cape to cape; within the bights it frequently fails, and even strong south-westers do not always blow home. The period of the year which has been mentioned as most favourable for running down the coast of Brasil differs, I am aware, very considerably from the opinions which prevail at the British Post-office; yet, when speaking of commercial affairs, I hope to prove that these months are best adapted for such a purpose. The allowances too, for drift, which have been explained, it is obvious, ought to be influenced, in some measure, by accidental circumstances; the most important are the place where and the direction in which we cut the current. The advice given is most applicable to cases where the Equator is crossed in about 29° of longitude, and the course steered directly upon St. Augustin. The cause of this mighty current, or marine river, is now well understood; but its strength, and in some measure its direction, which the navigator should carefully observe, depend upon the winds which have blown between either tropic and the Line.*

---

[*] "Notes on Rio de Janeiro and the Southern Parts of Brasil; taken during a residence of ten years in that *country, from 1808 to 1818.*" 4to., London, 1820.

"They are not so steady as has sometimes been represented, and seem to be very materially affected by the relative positions of the sun and moon. It is evident that both these luminaries produce a tide in the atmosphere, and sometimes counteract each other's influence. This occurs, in the smallest degree, when the new and full moons happen with the least difference in the declinations of the two bodies. In proportion as this increases, their operations on the air become disturbed; and every month a vessel, within the tropics, must be placed unavoidably between the foci or points upon which their influence most immediately falls. In such a situation, she will probably meet with calms. The winds will freshen continually in proportion as the moon approaches and passes over her, or recedes and leaves the influence of the sun more predominant. Hence it seems that the irregularities of the trade winds, so frequently noticed, and especially of the south-eastern trades, may be connected with the cycle of the moon, and return periodically. An attentive officer observes such circumstances, and endeavours to make use of them."

Whatever may be the anomalies or particular exceptions to the more general or predominant direction of the winds and currents, it is to be remembered that, "in whatsoever line or direction a portion of the current may move, it must rarely happen that it is neutral in respect of a ship's course; and that, on the contrary, it will either favour or impede it."

M. de Humboldt has noticed that, in the year 1803, several vessels bound from Cadiz to the Caraccas were forced to lie to, in the 14th degree of North latitude, and the 46th of longitude, on account of a very violent wind, which blew for several days from the N.N.W. He adds, "What extraordinary interruption must we suppose in the play of the aerial currents to explain such a cross wind?" Such anomalies as these serve, in some measure, to account for partial and contrary streams of water on the ocean.

Captain Livingston has informed us that the brig *Agnes*, in July, 1816, had three days light *westerly* winds, at some degrees to the eastward of Guadaloupe, in 16½° N.; and that the late Captain A. Rowland once experienced westerly winds for fourteen successive days near the same situation.

From Lieutenant Jn. Evans we also learn that, on the 1st of November, 1826, in 7° 30′ N. and 24° W. the southerly trade ceased, and was succeeded by variable winds and calms until the 6th, when the wind came from N.E. and E.N.E., and so continued until the 12th, when it became variable from S.E., E. by S., E. by N., S.E., and South, lat. 16° N., lon. 29° W. On the 16th it again steadied at N.E., in lat. 20° 16′, lon. 29° 32′. Here the S.E. wind appears as a remarkable break in upon the regular course of the N.E. trade, in the 16th parallel North, particularly so far to the westward of the Cape Verde Islands. In the forenoon of the 14th the wind blew strong from S.E., with a heavy sea.

On the 20th, in 23° 10′ N. and 33° 46′ W. the N.E. trade changed to a wind *westward*, which continued until the 24th, when it came round to N.N.E., in lat. 28° 58′ N., and lon. 29° W. This change of wind had no effect on the marine barometer, which stood steadily at 30.3; it however fell during the night of the 21st, when heavy squalls, with rain, came on, and rose again as the wind inclined to the northward.

---

* A just idea of the nature of the Equatorial Current will prevent a commander from crossing the Equator too far to the westward in the southern passage; particularly at the season when the S.E. trade wind is very far southerly; and when, also, the current runs so *strongly to the westward, in* the vicinity of Cape St. Roque, as to hazard a vessel's being driven *to the leeward of it.*

REMARKS ON SAILING WESTWARD OF THE CANARY ISLANDS, BETWEEN THE CAPE VERDE ISLANDS, AND TOWARD THE EQUATOR, BY CAPTAIN MONTEATH, IN THE BRIG MARY BRADE, FROM LIVERPOOL TOWARD CAPE HORN, APRIL, 1823.

April 2nd, 1823, at 4 p.m. the island *Palma* was in sight, bearing from S. 25° W. to S. 78° W., distant about 5 leagues; next morning, at 7 a.m., the island *Ferro* was in sight, bearing S.E. by E.

We carried fresh and fair winds from the N.E. to East, with a prevailing westerly current, until the afternoon of the 7th, when S. Antonio, the north-westernmost of the Cape Verde Islands, was discovered at 5^h 30′: the N.E. point bore S. 40° W., distant about 5 leagues, and the N.W. point S. 66° W., distant 8 leagues.

At 8 p.m. shortened and hauled by the wind under easy sail, tacking ship every two hours to preserve our position, as I intended at daylight to run through the channel between S. Antonio and S. Vincent, in preference to running to the westward of the former island. The wind, notwithstanding our vicinity to the land, continued steady from North and north-eastward during the night.

At 5^h 30′ a.m. bore up under all sail. The wind, as we drew near the high land of S. Antonio, veered round to the N.W.,* until we had fairly entered the channel, when it hauled gradually round to the N.E. and E.N.E., and continued to blow steady from that quarter until clear of the islands.

I have now to remark that this is the third time I have passed in the vicinity of these islands: in August, 1812, on a voyage to Rio de Janeiro; in February, 1818, on a voyage to Calcutta; on both of these voages I passed close to the westward of S. Antonio, without being becalmed, and also this voyage, having carried the trade wind steady through the channel to the eastward of it; for my own part, I do not conceive that there is the least necessity, as Captain Krusenstern recommends, to run to the westward so far as 27° or even 26½° W., as there is often a difficulty of making easting sufficient to cross the Equator on the meridian of 19° or 20° W.; the truth of which, from his own *remarks*, *he* experienced himself, having reached the 14th parallel of latitude before he had gained a single mile of easting, and which occasioned him to keep close by the wind for several days before losing the N.E. trade, to enable him to gain the meridian of 21½ West, on the 7th parallel. In future, if I have occasion to pass this way, I shall, in case the weather be clear, and a sight of the N.E. point of S. Antonio be obtained before dark, have no hesitation in running through the channel at night, with the greatest confidence, as there are no dangers except close in-shore.

We carried the breeze strong, all night of the 8th, from East; at daylight the islands of Fogo and Brava were in sight; the centre of Brava bearing E. ½ S., by compass. At 7^h 15′ a.m. the mean longitude, by four chronometers, was 25° 6′ 34″ W.; the North end of Brava bearing N. 53° E., and the South end N. 73° E., by compass. At 10 a.m. we were partially becalmed, having hauled up rather too near Brava; which island, from its height, intercepted the sea breeze: during this interval I lowered the boat, in order to ascertain the velocity and direction of the current; it was found setting N. by E. at the rate of 30 miles in twenty-four hours; there being no bottom at the depth of 80 fathoms. At noon the latitude by observation was 14° 38′ N., the N.W. point of Brava N. 25° E., the S.E. point N. 43° E.; the peak of Fogo N. 65° E. Angle of elevation of the Peak, 2° 14′. The number of the *Holothiena Utriculas* (Portuguese men-of-war) was immense, and the sea completely discoloured with different kinds and sizes of the mollusca tribes.

On the 8th of April, at sunset, we bade adieu to the Cape Verde Islands; the variation, by amplitude, being observed as 14½° W. On getting clear of them, I hauled up on a S. by E. ½ E. and S.S.E. course, so as to cross the Equator on the meridian of 19½° W. From Brava the trade wind continued steady from N.E. and N.N.E. until in the 6th parallel of latitude, and 19½° W. longitude. From thence to the 4th it was light from the northward, and to the Equator variable and squally (principally from the northward), with heavy showers of rain. The current on the 14th and 16th was found, from lat. 3° 40′ to 3° 30′ N., and lon. 19° to 18° 50′, to set N. 25° E. 12 miles in twenty-four hours; the temperature of the water at the surface being 84°, and at the depth of 100 fathoms only 77°. From the lat. of 3° 30′ to 2° 20′ N., lon. 19° 30′, experienced little, if any current; from the 2nd parallel to 1° 30′ N., during three days we had no observations: found the current, by calculation, had set N. 18° E. 42 miles, or 14 miles per day; and, by observations in the boat, it was invariably found setting each day N. ½ E. at the rate of 18 miles in twenty-four hours, the temperature of the water being 80° at the depth of 100 fathoms, while at the surface the thermometer stood at 83°. On the 23rd, in lat. 1° 15′ N., lon. 19° 45′ W., the current was found to set North, 20 miles in twenty-four hours; the temperature of the water at the surface being 83½°, and at the depth of 75 fathoms 81°. From the lat. of 0° 40′ to 0° 10′ N. an interval of forty hours, when we gained the S.E. trade, we experienced little or no current.

---

* *This circumstance is also noticed by* M. Frézier, in his Voyage to the South Seas.

Notwithstanding that we were ten days from the 4th parallel to the Equator, we were only thirty-seven hours becalmed; the greatest interval at any one time being nine hours; during this period we had to persevere against the strong northerly current, which drove us back, by observation, 90 miles. Throughout the forenoon of each day, in general, the weather was clear, although hot and sultry, and toward the afternoon it thickened and commenced raining very heavily for a considerable time before sunset, which enabled us to fill up, from the poop-deck, an original stock of good water; and I will venture to state that, if we had been in want of it, and had enow of spare casks, we should have been able to have filled, at least, twenty puncheons more of good and serviceable water.

For two or three days after losing the N.E. trades the motion of the sea was from that direction. A few days afterwards, in from 2° to 1° 30′ N., there was a heavy cross swell from the S.E. and N.E. quarters; and from thence, until gaining the S.E. trade wind, the swell continued heavy from S.S.E. and S.E.

This is the second time I have crossed the Equator on the meridian of 19½ W., and have certainly no reason to regret doing so, having both times accomplished it on the fortieth day of the voyage.

Remarks on Navigating between Rio Janeiro and off the Patagonian Coast to Cape Horn, &c., with the Returning Route.

For the elucidation of this part of our subject we have selected the descriptions of several passages, made in different seasons, as follows:—1. That of H.M.S. *Tartar*, by Mr. Wm. Wood, the master, in September, 1823; those of Captain J. W. Monteath, June, 1823, and January, 1824; that of Captain J. N. Smart, December, 1825; of Commodore Krusenstern, February, 1804; of Captain Kotzebue, December, 1823; Captain Vancouver, May, 1795; Captain Boulton, December, 1833: added to these are the remarks on navigating about and doubling the Cape by Captains Cook, Colnett, Basil Hall, and Weddell.*

From the Journal of Mr. Wm. Wood. [September, 1823; October, 1825.]

H.M.S. *Tartar*, on leaving Rio de Janeiro, 1st of September, 1823, steered South. In order to pass to the westward of the Falkland Islands that course was continued while the wind remained to the northward. The needle varied but little from the true North until in lat. 30° 25′ S., lon. 44° 50′ W. Variation there, 7° 2′ E. Thermometer, 67°. The wind had now varied from the northward to the southward of East, since p.m. of the 3rd, but light breezes and fine weather. On the 6th the wind was backing again to the N.N.E., with fresh breezes. On the 10th the wind had changed to the W.N.W. and W.S.W., in lat. 43° 17′, lon. 47°. *Var.*, 11° 47′ E. Thermometer, 71°. (East end of Falkland Islands, S. 40° W. 226 leagues.) Rain and lightning. Making about a S. 15° W. course, in lat. 45° 32′, lon. 47° 30′, the weather squally and unsettled, and a great swell from the southward. The winds very variable from the south-westward. Thermometer, 51°.

On the 15th the ship was lying-to under try-sails. At noon, latitude by observation 49° 33½′, and longitude, by chronometer, 51° 9′, weather very variable and unsettled, and the wind had veered to the northward and westward since the 12th. This day the thermometer stood at 38° on deck. Although the weather, in general, was very hazy, the meridian altitude of the sun at noon, and that of the moon at night, were attainable, by which our progress was ascertained.

---

* The route of Captain Livingston, in May and June, 1824, to the eastward of the Falkland Islands, with the particulars, is displayed on the chart; and, therefore, requires no further *explanation; as likewise is* that of the *Tula*, Captain Biscoe, in 1830.

Sept. 16. At noon, lat. by obs., 51° 18¼', lon. by chr., 65° 8'. Therm., 36°. Var., 11° 30' E. *Sept.* 18, at noon, lat. by obs., 53° 34 '40", lon. by chr., 54° 42' 30". Var., 19° 27' E. Therm., 40°. Weather very variable, from calm a.m. to strong gales at noon, when a large iceberg was seen, bearing South, 6 miles, and a small one S.S.W. 5 miles. At midnight strong gales and heavy squalls, with a great sea from the N.E., the wind veering to N.N.E. Steering S.W. under close reefed fore and main topsails and reefed courses.

Sept. 19. The weather thick and hazy. No sights for chronometer or latitude at noon; but, from last noon, computed the lat. 55° 12¼', and lon. 60° 37', when Cape St. John (Staten Land) bore N. 77° W. about 36 leagues. Steering S.W. with strong gales from the N.E., squally with snow and sleet: the thermometer had fallen to 35°.

Sept. 20. Latitude and longitude, from last noon, 56° 39' and 64° 19', with strong gales, heavy squalls with thick snow and sleet. Steering S.W. by S. and S.W. by W., wind variable from E.S.E. to N.E. by E. under close reefed fore and main topsails and reefed courses. At noon of this day Cape Horn bore N. 71½° W. 36 leagues. Although advanced so far to the southward as within 125 leagues of South Shetland the weather was comparatively mild.

Sept. 21. Strong gales and squally. Steering S.W. by W., at 12ʰ 21', an altitude of the moon's upper limb gave the latitude 56° 50' 42", which is the greatest southern latitude we made. Our lon. 67° 29' 30". Altered the course to W.S.W. westerly. The variation had increased to 21½° E. *Cape Horn*, in lat. 55° 58½', lon. 67' 11', bore N. 1½° E. 17¼ leagues. Strong gales from the northward, the ship running 10 knots on a W.S.W. course, until 6ʰ a.m., when the *Islands of Diego Ramirez* were seen to bear W.N.W., about 4 leagues distant. At 6ʰ 30' a.m. altered the course to West.

Sept. 25. At noon, lat. 51° 41' 46", lon. 78° 54'. Thermometer, 46°. Var., 22½° E. Since the 21st the ship has been steered to the northward and westward, with strong gales and squalls from the N.N.E. to N.N.W. and again to the N.E., the weather, in general, very unsettled; the ship lying-to for the most part of these twenty-four hours, on the starboard tack, until 6 a.m. this day, when she was wore to the northward, the wind shifting to the W.N.W., and moderating when the greatest longitude was 79° 10'.*

Mr. Wood, the master of the *Tartar*, adds:—I presume it may be considered, from the preceding remarks on the *Tartar's* passage, that no better season of the year could be adopted for doubling Cape Horn than the beginning or middle of summer, as we rounded the Cape and made the Islands of Diego Ramirez on the 21st of September, after the short run from Rio Janeiro of twenty days. But never having doubled Cape Horn before, I can speak only from the experience of a single passage; but, from that passage being one of the finest ever made, either at this or any other season of the year, I am induced to say that, should I ever make another voyage to the Pacific, either from Europe, Rio Janeiro, or any place to the northward of Cape Frio, and I could command my time and have the direction of the voyage, I would most certainly prefer the beginning or the middle of summer; not only because I should have longer days in my favour, by which the greater chance of avoiding the many icebergs which are found in these seas, but because I found the winds much in favour, from the time of leaving Rio Janeiro to that of doubling the Cape, being generally from the N.W. round to the northward, and as I advanced to the south-westward I found it varying to the north-eastward, and from that to the E.S.E.; from which reason, until taught otherwise by experience, I should always prefer keeping to the eastward of the Falkland Islands; for had we, on this passage, preferred going between them and Staten Land, or through the Strait of Le Maire, with the winds at E.S.E., the passage would have been much protracted.

I perfectly agree with Captain Colnett in not perceiving the necessity of going so far as 60° S.; but, if possible, would never exceed 57° or 57½°, so as to give the Islands of Diego Ramirez a good berth; or, if winds and weather would permit, make them for a fresh departure, particularly if I had not made Staten Land or the Falklands, and make my westing with all possible despatch.

In this passage we did not exceed 56° 50' 40" S., and 79° 10' W.

---

* The *Tartar proceeded hence to Valparaiso,* where she arrived on the 3rd of October.

On the return of the Tartar from South America in the month of *October*, 1825, the ship, on the 29th, at noon, was in lat. 58½°, lon. 66°. In the parallel of 58° 5¼′ the current was easterly. Here the wind veered to the N.W. and enabled the ship to shape a course to the eastward of the Falkland Islands. The wind, from this period to the 14th of November, was mostly from the N.W., with the exception of a few hours of S.W. winds in the vicinity of the Islands, passing Cape Pembroke to the eastward, about 8 leagues, although subsequently N.W. winds carried the ship as far to the eastward as lon. 38° in the 38th parallel of latitude, but which enabled her to make a fair wind of an easterly one for the port of Rio Janeiro;—otherwise had she kept a close luff, and gone to the westward of the Falkland Islands, an easterly wind would have been a foul one; and it is a common passage for ships at this season to be three weeks between the River Plata and Rio Janeiro. The Tartar arrived at Rio on the 17th day of November, being the 39th day from Concepcion, in Chilé.

CAPTAIN MONTEATH'S REMARKS on Sailing from the EQUATOR to the EASTWARD of the FALKLAND ISLANDS round CAPE HORN, on the passage to Valparaiso, in the Months of May and June, 1823.

The state of the weather and the winds on this passage, were, as usual, variable.

It may here be proper to notice that, previous to entering into these regions, and after entering into the regular S.E. trade wind, the vessel was not, as on former passages, set to the westward by the Equatorial Current; this is attributed to crossing it so far to the eastward.

From the latitude of 46° S. (30th of May, 1823,) the wind continued fresh from N.W. to West; the weather dark and foggy. For several days past I have remarked that the barometer and sympiesometer have invariably risen with a N.W. wind, and fallen on the approach of wind from S.W. For several days previous to and after passing the Falkland Islands we observed immense fields of seaweed, probably driven to the northward by the currents or S.W. gales. On the 2nd of June, at midnight, being nearly abreast of the N.E. point of Berkeley Sound, we sounded in 78 fathoms, sand with black specks and broken shells. At 4^h a.m. found 62 fathoms, with similar bottom; at 6^h a.m. 70 fathoms, yellow sand and shells, the vessel making a S. by E. course, by compass, at the rate of 5¼ miles per hour.

June 6. A fine steady breeze from N.E. with thick foggy weather during the afternoon, and throughout the night. At sunrise it shifted to East, and freshened to a brisk gale, with thick weather and small rain: the barometer and sympiesometer fell considerably; the former from 29.42 to 29.05, and the latter from 29.87 to 29.45. The temperature of the air and water also rapidly decreased; the former from 43° to 34°, and the latter from 41° to 36°. As we were now, by calculation, on the parallel of Cape Horn, I hauled up on a S.W. by S. course, in order that we might pass considerably South of the islands of Diego Ramirez, or in case that the vessel might have been set to the northward of the course steered by the currents.

June 7. The wind continued strong from E. by S., which enabled ns to steer on a S.W. by S. course at the rate of 10 miles an hour: at 6 p.m. it rather inclined to the southward of S.E.; altered the course to S.W. Toward midnight the wind abated considerably, and the instruments rose two-tenths of an inch: at 4 a.m. it veered round to S.S.E. and afterwards to South: at daylight (8 a.m.) we were, by estimation, in 56° 56′ S.; when, to our surprise, Hermite's Islands were seen bearing from S. 70° W. to N. 76° W., distant 8 or 10 leagues. The wind being light from the S.S.W. at 9^h tacked ship to the S.E.: at this time we counted distinctly 10 separate islands, and behind them appeared the mountains of Tierra del Fueno, covered with snow. The whole presented a most desolate and dreary appearance. At noon the latitude by observation was 56° 0′ 23″ S., Cape Horn then bearing S. 70° W., Cape Enganno, S. 82° W., and Barneveldt's Islands, N. 76° W., by compass.

The land here is very remarkable, and may be easily known. Cape Horn is very high, and was distinctly seen from the deck at the distance of 15 leagues: it forms a point, with a bluff peak to the South, in appearance not unlike the Lion's Rump, Table Bay (Cape of Good Hope). Between it and Cape Enganno, at the distance of 8 to 10 leagues, several lower lumps are seen; but, at the distance of 12 leagues, there is no appearance of land between.

For the last three days we have had no observation for the latitude, and the current must have set rapidly to the North, as the vessel was steered considerably South of the course given, and two points of variation allowed.

June 8. During the afternoon we had light airs of wind from the westward and clear weather. I observed that the vessel was set rapidly to the eastward until 3 p.m., when I considered, from the land near the Cape (which had disappeared at 1 p.m.) rising again to view, that the current had changed to the westward; probably the effect of the tides setting along the coast.

Throughout the night the breeze was light and variable from West to S.W., the vessel still standing southward; at daylight the Cape bore W. ½ N. and Cape Enganno W. by N. ½ N., by compass. I found, by one position, that the vessel had not been set much to the eastward. At noon the weather was calm and clear, but cold. Lat. 56° 15′ S. Cape Horn, W. ¾ N. and Cape Enganno, W. by N. ¾ N. This position, with the course and distance sailed, gives the set of the current N.N.E. ½ E., true, 17 miles in twenty-four hours.

June 9. Still calm, the weather cold, but clear and pleasant. At 3 p.m. sounded with 130 fathoms of line, but did not strike soundings. The temperature of the water at 100 fathoms was 42°; at the surface 40½°. At 7 p.m. a light breeze sprung up from S.W.; at 11^h it shifted to the S.S.E. Tacked ship to the westward. The weather during the night was thick and cloudy, with heavy showers of snow. At daylight the weather cleared up a little, which enabled us to ascertain our position; Cape Horn then bearing N.W. ½ W., by compass: at noon it bore N. ½ W., and Cape Enganno, N. ½ E. The wind steady from S.E. with heavy showers of rain.

June 10. The weather cleared up, which enabled us to distinguish the land to the westward of the Cape. This land is, in general, mountainous and rugged, and being covered with snow, and a lee-shore, presented a most dismal aspect. I can form no opinion, from the distance at which we were, whether it was part of the main land or not; for, to our view, it seemed to consist of a number of islands. At this time Cape Horn bore N. by E., the first headland to the westward N. by W., and the westernmost *high land* N.W. by N., by compass.

At 3 p.m. the islands of Diego Ramirez were in sight; the northernmost, which I judge to be the highest and largest (from its having been seen a considerable time before the other two), bore S.W. by W.; it was my intention to have passed to the southward of them, but as the wind was scant for that purpose, and night approaching, I shaped our course to the northward of, and passed them at the distance of 3 or 4 miles.

At 10^h p.m. the northernmost island bore South, true, distant 3 miles: the wind light and baffling. At midnight it again freshened from the S.S.E. to a steady breeze. (The instruments since evening had fallen considerably.) We were thus enabled to steer on a W.S.W. course, by compass, at the rate of 7½ miles an hour. At 8^h a.m. we were overtaken with a sudden and most violent squall from S.E., with heavy snow, which caused us to run before the wind until we succeeded in clewing up the sails; this, from the frozen state of the ropes and canvas, was not an easy task. The storm continued to blow with tremendous fury for about an hour, when it abated considerably, and the sympiesometer began to rise rapidly. At 10^h a.m. bore up on a W.S.W. course, with the wind at E.S.E. blowing strong: at noon it moderated considerably, and continued from the same and the South quarter to the 14th, on which day we had attained the latitude of 50° 44′ S. and lon. 79° W. The variation was observed as 21° E. The current, since leaving Diego Ramirez until arriving at this position, had set us to the eastward of the course steered upwards of 60 miles.

From the 15th of June, in lat. 57° 18′, lon. 76°, to the 24th, in lat. 50° 48′, lon. 81° 17′, the thermometer ranged from 39° to 48° at noon: the wind being S.W. by W. at its *minimum* or lowest point, and easterly at its *maximum*.

With regard to passing to the eastward or westward of the Falkland Islands, I believe it is immaterial, and should be regulated according to the state of the winds: because, on comparing the journals of several vessels that passed the Cape nearly at the same time as ourselves, I found little difference, as to time, between those who passed outside and those who passed inside of these islands.

I should, however, at this season prefer passing outside; because, at this time, the weather is *generally foggy; especially* with N.W. and East winds. This, with the difficulty of obtaining observations for correcting your dead-reckoning, and the uncertainty of the strength and direction of the currents, renders, in my opinion, the outside passage safer than the inner one.

On this passage the barometer and sympiesometer gave us always sure and indicative signs of a change in the strength of the winds; often standing high when the weather was thick and foggy, and had continued so for several days. I however found, on our return voyage, off the islands of Diego Ramirez, on the 27th and 28th of January, 1824, that the instruments fell lower on these days than they had done at any former period. This I cannot attribute to the wind; as it then was and continued light from the eastward, with a heavy cross sea from that quarter; the weather thick and foggy; and, when the wind freshened up to a moderate gale from East, on the 29th, they resumed their usual height.

It is but doing justice to *Mr. Adie*, the inventor of the sympiesometer, to state that I consider it far superior to the marine barometer, as I often found it to indicate a change, both in falling and rising, long before the barometer gave warning that a change would take place.

The mean longitude, by chronometers, January 28th, 1824, of the southernmost island of Diego Ramirez gave 68° 38′ 55′ W., estimating Valparaiso at 71° 31′ W. The current between the latitudes of 56° 30′ and 57° 30′ S. and longitudes 71° to 66° 30′ W. set nearly East, at the rate of 20 miles per day: from this position it shifted to the North, and set round the East point of Staten Land at the rate of 1 mile an hour.

On the 26th of *January*, 1824, when the brig *Mary Brade*, homeward bound, was in lat. 57° S., lon. 71° W., the wind shifted to the N.E. (the moon being then at its greatest southern declination) and remained in the eastern quarter until the 30th, with strong breezes and dark gloomy weather: the current during this time ran rapidly to the eastward; it now fixed itself in the southern quarter, with moderate weather, until February the 9th, when the vessel, being homeward bound, had attained the latitude of 41° S. and lon. 50½°.

"On this passage, says Captain Monteath, we saw two immense icebergs; the first on February 1st, in lat. 53° 24′, lon. 57° 50′; the second on the 4th, in lat. 50°, lon. 56°. The latter was plainly seen from the deck at the distance of 27 miles: it was surrounded with a greater number of small bergs, which, no doubt, originally belonged to, and were separated from, the main body by the melting of the ice at the water's edge. We observed a tremendous mass fall from it into the sea a little before we passed it. From its size and appearance it is my opinion that it would not be wholly dissolved for at least six weeks or two months after we saw it. This will serve to show the necessity of a strict look-out being kept for ice, especially in foggy weather, or during the night, even in these comparatively low latitudes, and an advanced season of the year."

On advancing northward from the parallel of 41° S. from the 11th to the 15th of *February*, 1824, the winds prevailed from the North, with heavy squalls and rain, the current setting strong to the southward. On proceeding toward Cape Frio, from the 15th to the 18th, the winds were variable, from the South to the N.W.; from this to the 26th they were steady at N.N.W., with a strong easterly current in latitudes from 36° to 32°, and longitudes 44° 45′ to 39° 30′.* This, adds Captain Monteath, carried us very far to the eastward, as we were in 36° 10′ W, when we had attained only the latitude of 28° 30′. The breeze again came round to the S.E., gradually backing round to the N.E. As we approached the Brasilian coast, off Cape Frio it was at N.N.E.

FROM THE JOURNALS OF CAPTAIN SMART.

The brig *Arab*, of Liverpool, commanded by Lieutenant J. N. Smart, R.N., sailed from the Mersey on the 23rd of October, 1825, and crossed the Equator in lon. 25° W., November 19th.

Captain Smart says, It is well to cross the Line between the meridians of 21° and 24° W.; but I should not hesitate in crossing it as far to the westward as 27°, if the wind compelled me to do so, rather than be beating about, for a length of time, to get to any particular meridian.

On the 8th of *December*, then in lat. 39° 12′ 37″ S., lon. 50° 12′ 37″ W., a heavy gale of wind came on, which lasted forty hours. It blew from W. by N. about twenty-six hours, and then shifted to W.S.W. The barometer and storm-glass both indicated this gale, and preparations for it were, therefore, made in time.

---

* *Thus crossing the outset from the River Plata.*—EDIT.

On the 11th of the same month, in lat. 41° 56′, lon. 49° 56′, a gale came on from West, which lasted three hours and a half. On the 15th, at noon, the reckoning gave 34′ of westing, when the chronometers gave 11′ of easting, consequently there had been an easterly current.

December 22nd, at 4^{h}, Cape St. John S.S.E. ½ E. 6 miles; running with a strong gale at North; at 5^{h} 30′, with the Cape S.W., there was little wind, but a very heavy swell, by which the Arab was carried off the land at the rate of about 3, 3½, and 4 miles an hour, with a strong current setting E.N.E., exceeding, says Captain Smart, any I ever before saw in the open ocean.

At 9^{h} p. m. we had a light air from N. by E.; the swell mostly gone down. This wind continued for about an hour; it then shifted to W.S.W., with squalls. About an hour after this it came at N.W., and continued so until 6^{h} a.m. of the 23rd, when it again shifted into the W.S.W., and began to blow hard. The barometer indicated 28.8, and the storm-glass was very much agitated. It blew a strong gale from 6^{h} a.m. of the 23rd until noon of the 24th. On the 23rd we were in lat. 55° 11′ 14″ S., lon., by chronometer and observation, 63° 34′. Dead reckoning gave 55° 15′ S., and 63° 38′ W. On the 24th the ship's lat. was 55° 2′ 19″ S., lon. 62° 15′ 45″ W., when the reckoning gave 55° 35′ S., and 63° 0′ W. The ship's head, during these twenty-four hours, had never been to the eastward of S.E. by E., and only that for four hours; the other twenty hours up S.S.E., off S.E. Allowing four points of lee-way, and two points of easterly variation, it gives 35′ of easting, and 7′ of southing; but our observation gave 9 miles of northing, and, by mean of three chronometers, 78 miles of easting; we had, therefore, a current setting to the northward and eastward at the rate of 3¼ miles per hour.

The wind having shifted to S. by E., at 1^{h} p. m. on the 24th, we wore and stood to the southward and westward, judging that we might get the current on our lee-bow; it also became more moderate, so that we were able to carry single reefed topsails, courses, jib, and trysail; with this sail and a very heavy swell we were going at 3 and 3¼ knots per hour, and lying up S.W., S.W. ½ W., and never to leeward of S.W. by W.; but were much surprised when, at 7^{h} in the morning of the 25th, we again saw Staten Island. We stood on until 9^{h}, when, the wind having shifted to S.S.W., we wore and stood to the southward and eastward, and at noon, on this day, were in lat. 54° 51′ S., lon. 62° 44½′ W.; thus having made nearly a W.N.W. course, when there was reason for supposing that the course made was W. ½ S., or at all events West. The variation, by mean of five azimuths and amplitude, was 21° 8′ East.

We were becalmed from the noon of the 25th until 3^{h} a.m. of the 26th, during which period we were carried 43 miles N. 78° E. Lat. this day, 55° 28′ S., lon. 62° 11½′ W.

December 27th. Although it was not intended to come in sight of Cape Horn, bad steerage brought us in sight of it, and soon after the wind fell almost calm, so that we were just able to keep the vessel's head the right way. By this calm it was soon discovered that a current set to the westward; and no regret, therefore, was felt on coming in sight of this sterile looking shore. Variation, by mean of five azimuths, 23° 57′ 30″ E.

December 28th. Between 9 and 10^{h} a. m. we had very light airs, with a heavy swell, a current still sweeping us to the westward. At 10^{h} 10′ a breeze from the W.N.W., and at noon it came from N.W., when the N.W. point of Diego Ramirez bore S. 9° W. by compass, distant 6 miles. At 2^{h} p.m. we were enabled to see the Ildefonso Islands. Like Diego Ramirez, the latter are high barren rocks, and to be seen at a considerable distance. The coast of Tierra del Fuego was seen from the deck, and a more uninviting shore is rarely to be met with; it was covered with snow, excepting only a few patches where the snow had melted. At 4^{h} p.m. a very sudden gale came on from W.N.W., so that in half an hour we were lying-to under our storm-sails; the gale lasted sixteen hours. On the 31st of December a gale from the same quarter lasted seventeen hours.

On Tuesday, 3rd of January, 1826, we were in lat. 58° 27′ S., lon. 80° 32′; this was the highest southern latitude we attained. Variation, per azimuth, 26° 51′ E.; by amplitude, 26° 59′ E. The barometer at noon stood at 28.8, the thermometer at 48°, and the temperature of the water at 46°.

On the 5th of January, at noon, we had reached as far to the westward as 81° 42′ W. in lat. 56° 13′, with a very heavy swell and variable winds; but the winds prevailed mostly from S.S.W. to N.W., so that the vessel was enabled to steer for her destination; the winds would not allow her to go farther West, or it was my intention to have gone to 84°; but I have no doubt that we made as good a passage as if we had been more to the westward, for we were only eleven days from this to Valparaiso. We had frequently fresh gales, with a heavy sea, but more particularly when we approached the land the sea was tremendous; the vessel, however, was good, and we were enabled to scud.

Admiral Krusenstern's Remarks on crossing the Line, and passing through the Equatorial Current, have been given in the *Atlantic Memoir*, 8th Edit. pp. 239—242. On the 9th of *February*, 1804, the *Nadeshda* had arrived in 34° 38′ S., and 47° 30′ W. With winds previously veering from E.S.E. to N.N.E. the course was southerly. It blew very fresh, with gusts of wind and rain, and then again fair weather.

The ship advanced toward the South until she attained the latitude above mentioned. At 2ʰ a.m. the lieutenant who kept the middle watch observed a curious ripple of the water, occasioned by a current. It formed a line stretching N.N.E. and S.S.W. as far as the eye could reach; and was throughout lighted up so strong that, according to his description, it had the appearance of a fiery furrow. This was the true limit of the current, which, since our departure from St. Catherine's, had carried us 15 miles a day to the S.W.

On the 10th of February, at noon, it was found that the current had set N.N.E. 17 miles in the vicinity of the River Plata, the mouth of which was passed at the distance of 240 miles; and by the time the ship had completely passed the mouth of this river, the current set 32 miles in the same direction as the preceding day, N. 28½° E. The weather was now most favourable, and the wind generally fair. In the parallel of 37° the first albatross was seen, and several storm birds. In that of 40° were seen several large beds of seaweed, which are generally supposed to denote the vicinity of land, but from which the ship was 600 miles distant.

On the 21st of February the ship's lat. was 49° 43′, in lon. 65° 13′; the wind in the night shifted to the westward, nearly in the centre between the Falkland Islands and the coast of Patagonia, and the ship's true course was S. by E., but with a high sea from the southward. Variable weather ensued; and on the 24th Cape St. John, the East point of Staten Island, was estimated to be S.S.E., 90 miles distant.

The commodore states, that although the wind was favourable for passing through the Strait of Le Maire, he thought it better to sail round Staten Island, the currents in the Strait being often very dangerous to shipping, as the experience of many navigators has shown; and the advantage, on the contrary, very trifling.

M. Kotzebue says, On the evening of Christmas Day, 1823, after doubling the Cape without difficulty, and sailing close along the isles of Diego Ramirez, inhabited by immense numbers of sea birds, a favourable East wind swelling the sails, on the 28th they did their best to clear the land of Tierra del Fuego, before a westerly wind should impede their progress; "but in this we were disappointed, for a sudden storm drove us out of our course to lat. 59½°. Here, for a new year's gift, we fell in with a fresh South wind, which helped us forward at the rate of 11 miles an hour, and continued to swell our sails till, on the 5th, we lost sight of the Tierra del Fuego, and joyfully continued our voyage northward."

On the 20th of May, 1795, **Captain George Vancouver**, in H.M. sloop *Discovery*, the *Chatham* tender in company, was on *his return from Valparaiso*, and in lat. 50° 50′, lon. 79°. On proceeding hence to the southward, the weather gradually changed for the worse, and the wind, previously favourable, became turbulent, and blew at times in very heavy squalls, which produced material damage to the sails and rigging. The wind, at W.S.W., continued to blow with great violence until midnight, when it became somewhat more moderate, and the mainsail and storm staysail were set. Toward the next morning, after lowering the topsails, and hauling up the mainsail, in a heavy squall of wind and hail, wore ship, to wait for the consort. "In the afternoon, although the wind continued nearly from the same quarter, the weather became more moderate, and we were able to get up topgallant yards and masts, and to make the best of our way toward the South, directing our course as much to the eastward as the variation of the wind *would permit.* This favourable change, however, was not of long duration; for in the *afternoon of the 25th,* on the wind veering to the West and N.W., we were obliged to close reef the fore and main topsails, and take in the mizen topsail. The gale continued to increase with so much violence that, by 7^h a.m. of the 26th, we were under the necessity of handing our topsails, and getting the topgallant yards and masts down upon deck, and to make the ship as snug as possible." Observed latitude at noon, 56° 4′, longitude about 74°. It now appeared that the ship had been set, in two days, 13 miles to the northward, and 25 miles eastward, by the current. The wind continued to blow very hard, varying between W.S.W. and W.N.W., until toward the evening, when it altered to the East and E.S.E., brought on with it a very heavy fall of snow, and blew so violently, that the weather maintopsail sheet gave way, and the sail was taken in. At about 6^h a.m. on the 27th the wind again changed to the S.W., and the weather became sufficiently moderate and clear as to allow the topgallant masts and yards to be gotten up, and reefed topsails to be set. Just before 9^h a.m. an island was seen, bearing by compass N. 15° W., supposed to be *St. Ildefonso*, which afterward was brought to bear W.S.W. On the 28th the wind was less boisterous than on the succeeding day, but the weather continued to be unpleasant, being very dark and gloomy, with frequent heavy showers of snow. At about 11 p.m., in a squall of hail, rain, and snow, the maintopsail was split, but it was replaced by another, the best on board.

Although the snow continued to fall heavily, four altitudes of the sun were obtained, when the latitude was found to be 56° 57′, longitude about 67° 30′. Variation, 23° E. The ship proceeded hence toward St. Helena, on the way searching for the Isle, or imaginary *Isle, Grande*, as will be noticed hereafter. (*Vancouver*, Vol. III. 465—67.)

CAPTAIN J. S. BOULTON, in the *Arethusa*, whose route from Van Dieman's Land is described in Vol. II. of the *Nautical Magazine*, pp. 454—461, passed *Cape Horn* on the 26th of December, 1833: and, with a fine breeze, on the 27th passed *Staten Island* at the distance of 24 miles. Hereabout were great quantities of the albatross, penguins, with other aquatic birds, and a few seals.

Captain B. says, "The prevailing opinion that the weather off the southern promontory of America is *always* rough and tempestuous, is certainly ill founded. This is the third time that I have rounded it with the finest weather imaginable; and once, in the depth of winter, I was becalmed three days in sight of this cape, the darkness alone rendering it unpleasant. Of all parts of the world subject to storms, that between the Azores and the coast of Britain is the worst."

On the NAVIGATION AROUND CAPE HORN, Captain Colnett made the following remarks in 1793.

"I have doubled Cape Horn in different seasons; but were I to make another voyage to this part of the globe, and could command my time, I would most certainly prefer the beginning of winter, or even winter itself, with moonlight nights; for, in that season, the winds begin to vary to the eastward, as I found them, and as Captain Macbride observed at the Falkland Isles. Another error, which, in my opinion, the commanders of vessels bound round Cape Horn commit is, by keeping between the Falkland Isles and the main, and through the Strait of Le Maire; which not only lengthens the distance, but subjects them to a heavy irregular sea, occasioned by the rapidity of the current and tides in that channel, which may be avoided by passing to the eastward. At the same time I would recommend them to keep near the coasts of Staten Land and Tierra del Fuego, because the winds are more variable in with the shore than at a long offing.

"If it should be observed that a want of wood and water may render it necessary for vessels to stop in the Strait of Le Maire, I shall answer that there is plenty of water at the Falkland Isles, and Staten Island not only abounds in both, but possesses several excellent harbours. I first visited this place with Captain Cook, in the year 1774; and on my outward-bound passage to the north-west coast of America, in the year 1786, as commander of the merchant-ship Prince of Wales, I wooded and watered there, and left a party to kill seals. For my own part, I do not perceive the necessity, according to the opinion of different navigators, of going to 60° S. I never would exceed myself 57° 30′, to give the Isle of Diego Ramirez a good berth; or, if winds and weather would permit, make it for a fresh departure, had I not taken one at Cape St. John, Staten Land, or the East end of Falkland Isles. Staten Land is well situated as a place of rendezvous, both for men-of-war and merchant-ships: while the harbours on the North and South sides, which are divided by a small neck, would answer the purpose of ships bound out or home. The *North side offers the best* place for an establishment."

Routes of La Perouse, Kotzebue, &c.

The French captain La Pérouse passed through the Strait of Le Maire in February, 1786, when the stream carried the ships violently to the southward. The horizon was so foggy towards the East that Staten Island was not seen; but on the shore of Tierra del Fuego, by telescopes, the natives were seen lighting fires, as an invitation to the shore. Captain Pérouse says, "I doubled Cape Horn with much greater facility than I expected: though I am convinced that this navigation is not more hazardous than any other in these high latitudes. The dangers we dreaded were only the chimerical offspring of an ancient prejudice, which ought no longer to exist, and which the reading of Anson's Voyage contributes not a little to support."

The Russian commander *Otto Von Kotzebue* passed Cape Horn in the month of January, 1816; he proceeded to the West of the Falkland Isles, and eastward of Staten Land. The 16th of *January*, in lat. 49° 5′, lon. 63° 31′, a fresh North wind, with beautiful weather, brought us nearer to Cape Horn; at noon we sounded, and found 60 fathoms of water, over a bottom of gray sand. On the 19th, at 8^h a.m., we descried Cape St. John, at the distance of 40 miles; at noon, the weather being very fine, the frightful country of Staten Land appeared. Cape St. John lay S. 12° W. 25 miles distant; the current set strongly to the E.N.E.* Toward midnight we had doubled Staten Land; the wind blew strong from the North. I bent my course to the S.S.W., in order, for security, to keep distant from the shore; and, contrary to the custom of other navigators, I then took a more westerly course, to double Cape Horn as sharp as possible. On the 22nd, at 4 a.m. we crossed the meridian of Cape Horn, in 57° 33′ S., which was evidently a great advantage to us, as we had not gone so far to the South as others used to do.† We were surrounded by whales, dolphins, and albatrosses. While we were doubling Cape Horn, we were encountered by high storms from S.W., which continued several days, and it was not till the 1st of February that we succeeded in passing the latitude of Cape Victoria. We triumphed; for now we had no fear of being driven back by westerly storms.

Captain Cook ‡ says, "It may still be questioned, whether it is better to go through the Strait of Le Maire, or stand to the eastward, and go round Staten Land." The advice given in the account of Anson's Voyage is, "That all ships bound to the South Seas, instead of passing through the Strait of Le Maire, should constantly pass to the eastward of Staten Land, and should be invariably bent on running to the southward as far as the latitude of 61° or 62°, before they endeavour to stand to the westward." But in my opinion different circumstances may at one time render it eligible to pass through the Strait, and to keep to the eastward of Staten Land at another. If the land is fallen in with to the westward of the Strait, and the wind is favourable for going through, I think it would be very injurious to lose time by going round Staten Land; as I am confident that, by attending to the directions which I have given, the Strait may be passed with the utmost safety and convenience; but if, on the contrary, the land is fallen in with to the eastward of the Strait, and the wind should prove tempestuous and unfavourable, I think it would be best to go round Staten Land. But I cannot, in any case, concur in recommending the running into the latitude of 61° or 62°, before any endeavour is made to stand to the westward. We found neither the current nor the storms which the running so far to the southward is supposed necessary to avoid; and indeed, as the winds almost constantly blow from that quarter, it is scarcely possible to pursue the advice. The navigator has no choice but to stand to the southward, close upon a wind; and by keeping upon that tack he will not only make southing but westing, and if the wind varies toward the North of the West, his westing will be considerable. It will, indeed, be highly proper to make sure of a westing sufficient to double all the lands, before an attempt is made to the northward, and to this every man's own prudence will, of necessity, direct him.

Remarks by Captain Basil Hall, R.N., &c.

Captain Basil Hall, from his valuable experience, has said (in 1820) that "a consierable difference of opinion prevails as to the fittest time of the year for making a passage ound Cape Horn from the eastward. There seems good reason for believing that, in winter, when the sun is to the northward of the Equator, the chance of easterly winds is the greatest; and many persons are of opinion that the westerly gales are then neither so violent nor so lasting as during the months when the sun is southward of the Equator. Admitting the circumstances to be as stated, there remain two very serious objections to the winter season; first, the length of the nights; and secondly, the presence of ice islands. In a tempestuous and frigid latitude the absence of daylight always augments, in a very serious degree, the difficulties of navigation, but when the formidable danger of icebergs is added, there can be little farther question, I think, as to which season is preferable. All accounts seem to agree, that it is during the winter and spring months, July, August, and September, that the ice is most generally met with; and as the masses in which it floats about are sometimes only a few feet above the water, and such as cannot possibly be distinguished at night, the risk which ships run in winter months is very great. Sometimes it is met with in fields, which embarrasses ships exceedingly; and since the opening of the commerce with the shores of the Pacific has multiplied the number of vessels navigating these seas, many accidents occur every season."

---

* The north-easterly currents indicated on the Chart have been so indicated from the information of Mr. L. Frazier, who states that they appear much stronger near the land than farther out. These are readily enough accounted for from the West and S.W. winds of the Antarctic Ocean.—Edit.

† *This corroborates* the opinion and advice of Captain Colnett, as before given.—Ed.

‡ *First Voyage, 1769.*

Commodore Bowles has noticed that, although the dangers and difficulties of a passage round Cape Horn into the Southern Pacific are not of the formidable nature commonly imagined, yet much severe weather may be expected, especially near the Equinoxes, when hard gales from West to S.W. prevail, and are more serious from the severity of the cold, which makes reducing sail at night difficult and dangerous.

Passing through the Strait of *Le Maire* is now very generally disused; as the short distance gained is much more than counterbalanced by the danger of entangling your ship with the land, in the event of a shift of wind, as well as the risk to which she is exposed from the rapidity of the tide. The whalers now make the Falkland Islands, and see Staten Island only, as they pass to the westward.

In describing a passage *from the Pacific Ocean* round Cape Horn and toward Rio Janeiro, in 1822, Captain Hall says, "From 49½° S. and 82° W. to 55° S. and 78° W. we *had fresh* N.N.E., N.N.W., and N.W. winds. Just as we were about to haul up to round the Cape on the 12th of August, the wind came from N.E. by compass, or about E.N.E. *true*, which obliged us to go as far as 57½° S. before the wind shifted to West and N.W. We passed out of sight of Cape Horn on the night of the 14th of August. From the meridian of Cape Horn to that of the Falkland Islands we retained the N.W., and latterly the S.W. winds. It then fell calm; after which we had S.E. and S.S.E. breezes, with snow showers (the first we had seen), nearly as far as lat. 40° S. In the Pacific, between 50° and 55°, we had hard breezes, with rain and a considerable sea, but not such as to prevent our scudding with ease. During all the passage of the Cape we had fine weather, with smooth water and a mild climate, that is to say, the thermometer was not below 39°. Off the Falkland Islands, with an E.S.E. wind, it fell to 35°. This temperature seemed cold to persons recently come from a residence of more than six months in one of the hottest parts of the world; but, upon the whole, the season was finer than that of the correspondent North latitude.

The Remarks of Captain James Weddell, 1822—23.

Many commanders of ships who have been successful in making a passage round Cape Horn, to the westward, have treated with unmerited derision the accounts given by Commodore Anson of this navigation.

I am quite satisfied, from my own experience, that the month of March might be productive of all the distresses described by the journalist. Captain Porter, who passed th Cape in the American frigate *Essex* in March, 1814, says, "Indeed our sufferings, sho as has been our passage, have been so great, that I would advise those bound into tl Pacific never to attempt the passage of Cape Horn, if they can get there by any oth route."

The difficulty, however, in making this passage is removed by choosing the pro season; which when attended to must at least save much time, and wear and tear of ship. In the beginning of November the winds begin to draw from the northward, continue to be frequent till about the middle of February, when they shift into the S quarter: during these months the westerly winds are not lasting, hence the passage be easily effected. From about the 20th of February to the middle of May the v are generally *between S.W. and N.W.*, and blow with great violence. Durin interval no ship need expect to make a passage round the Cape that is not well equipped in every respect. From the middle of May to the end of June the winds prevail from the eastward, with fine weather. During these six weeks a vessel may round the Cape in sight of the Isles Diego Ramirez. In July, August, September, and October, the winds prevail again between S.W. and N.W., but August and September are more particularly tempestuous. In regard to the route which ships should take to round the Cape, much depends on the season of the year, as relates to the force of the prevailing westerly winds. I prefer, at all times, passing to the westward of the Falkland Islands; and, in the summer season, to pass through the Strait of Le Maire, as it saves 50 or 60 miles of westing, and can be attended with no risk if you have sufficient daylight to see to run back through the Strait, in the event of being caught with a southerly gale at the southern entrance.

From my having been engaged five years in navigating these seas, and having performed a passage of 26° of longitude direct to the westward about the parallel of Cape Horn during the stormy month of April, I am fully acquainted with the perils and inconveniences of this navigation, and can offer my experience with the confident expectation of its being found useful.

Passage of the Jane and Beaufoy, under Captain Weddell, 1820.

On the 23rd of *October*, 1822, in the latitude of 8° N., the wind became light and variable, and so continued to 5° N., when the S.E. trade was found. On the 7th of November crossed the Equator under the meridian of 30°, and the trade wind being far southerly, the *Jane* passed Cape St. Augustin within the distance of 100 miles.

As far as the latitude of 24° S. the wind frequently blew from N.W. to N.N.E. in heavy squalls, with thunder and heavy rain.

At this season, says Captain Weddell, the route we took may be recommended for a quick passage; but for the health of a crew entering upon a long voyage the coasting passage is highly injurious. I had one man at the point of death by an attack of *tetanus*, brought on by his exposure to heavy rains.

The *Jane* and *Beaufoy* continued standing to the southward until they reached lat. 40° S., when they stood in to the westward for the coast of Patagonia.

At 8^h a.m. of the 3rd of *January*, 1823, eastward of the Falkland Islands, the wind shifted suddenly from W.N.W. to South, and in less than half an hour the Jane was brought-to, under a close-reefed main-topsail. The gale continued with great violence, and with a most irregular sea, till the evening of the 4th, when it moderated. The temperature of the elements during the gale was, air, 39½°, and water, 49°. This was surprisingly low for midsummer, and the latitude of 53°; but when we consider that a South wind blows over the frozen land of South Shetland, the temperature of the air must, of consequence, be much reduced in the neighbourhood of Cape Horn.

On the 6th, in the morning, the wind again freshened at S. by E. to a gale, with a high and irregular sea, which in the afternoon stove two boats, washed away part of the bulwarks, and carried several things off the deck. This distressing sea was apparently produced by a tide or current, as the vessels were now not more than 100 miles S.E. of the Falkland Islands. At midnight the weather moderated suddenly, until there was scarcely wind sufficient to keep the ship steady. This was succeeded, on the next day, by fine weather.

The wind continued blowing moderately from S. by E. to S.S.W., with passing snow squalls; and on the 10th, in lat. 58°, five ice islands were seen. On the 11th, at noon, in lat. 59° 37′, lon. 46° 1′, the temperature of the air was 33°, and that of the water 33°. Many ice islands in sight accounted for the low temperature of the latter.

At daylight in the morning of the 12th some pigeons were seen, and at 6^h a.m. the eastern end of Powell's Group, or South Orkney, then bearing W. by S. about 11 leagues. All possible sail was made, in order to get under the land, but the wind soon became light and left the vessels almost at the mercy of a heavy swell, in the midst of ice islands, which rendered the navigation dangerous. At 8^h one of the Eastern islands (*Saddle Island*) bore S. 10° W., distant about 11 leagues.

During the 13th the wind was light and from the N.N.W., which in this region *generally* brings fog: but it shifted to S.E. with clear weather. Temperature of the air, *34°; water, 33°.*

On the 27th of January, at noon, Captain Weddell had reached the latitude of 64° 58′, longitude 39° 40½′. Variation of the compass, by azimuth, 16° 37′ E. Temperature of the air, in the shade, 37°, of the water, 34°, and weather much more settled than in the lower latitudes of 60° and 61°.

After standing to the northward, with the wind between S.E. and S.W., at noon, on the 29th of January, the latitude was 61° 18′, and longitude 40° 32′. Temperature of the air 34°, of the water the same, among numerous ice islands.

February 1st, at noon, lat. 58° 50′, lon. 38° 51′. On the 2nd, a.m. the wind freshened W.S.W. to a gale. Snow squalls frequent, and many ice islands. Running East, between 60° and 61°, flocks of birds, common in these latitudes, and many finned and hump-backed whales were seen, with innumerable penguins, having for their resting place some ice island. By the evening of the 4th the *Jane* was within 100 miles of Sandwich Land, and it therefore appeared that no intervening land could exist.

Nautical Remarks upon the Passage to and round Cape Horn, by Captain P. P. King, R.N.*

Ships bound from the Atlantic to any of the ports in the Pacific will find it advantageous to keep within 100 miles of the coast of Eastern Patagonia, as well to avoid the heavy sea that is raised by the westerly gales, which prevail to the eastward, and increase in strength according to the distance from the land, as to profit by the variableness of the wind when it is in the western board. Near the coast, from April to September, when the sun has a North declination, the winds prevail more from the W.N.W. to N.N.W. than from any other quarter. Easterly gales are of very rare occurrence; but even when they do blow, the direction being obliquely upon the coast, I do not consider it at all hazardous to keep the land on board. In the opposite season, when the sun has South declination, the winds will incline southward of West, and frequently blow hard; but, as the coast is a weather shore, the sea goes down immediately after the gale. In this season, although the winds are generally against a ship's making quick progress, yet as they seldom remain fixed in one point, and frequently shift backward and forward six or eight points in as many hours, advantage may be taken of the change, so as to keep close in with the coast.

Having once made the land, which should be done to the southward of Cape Blanco, it will be beneficial to keep it topping on the horizon, until the entrance of the Strait of Magalhaens be passed.

With respect to this part of the voyage, whether to pass through Strait Le Maire or round Staten Island, much difference of opinion exists. Prudence, I think, suggests the latter; yet I should very reluctantly give up the opportunity that might offer of clearing the Strait, and therefore of being so much the more to the windward. With a southerly wind it would nót be advisable to attempt the Strait; for, with a weather tide, the sea runs very cross and deep, and might severely injure and endanger a small vessel, and to a large one do much damage. In calm weather it would be still more imprudent (unless the western side of the Strait can be reached, where a ship might anchor), on account of the tides setting over to the Staten Island side, where, if it becomes advisable to anchor, it would necessarily be in deep water and close to the land. With a northerly wind the route seems not only practicable, but highly advantageous, and it would require some resolution to give up the opportunity so invitingly offered. I doubt whether northerly winds, unless they are very strong, blow through the Strait; if not, a ship is drifted over to the eastern shores, where, from the force of the tides, she must be quite unmanageable.

Captain FitzRoy seems to think there is neither difficulty nor risk in passing the Strait. The only danger that does exist, and that may be an imaginary one, is the failure of the wind. Ships passing through it from the South are not so liable to the failure of the south-westerly wind, unless it be light, and then a breeze will probably be found from N.W., at the northern end of the Strait. The anchorage in Good Success Bay, however, is at hand, should the wind or tide fail.

In passing to the leeward of Staten Island, the tide race, which extends to some distance off Cape St. John, at the N.E. end of the island, must be avoided; otherwise there exist no dangers.

---

* *Voyages of the Adventure* and Beagle, vol. I. p. 463.

The anchorage under New Year Islands, although it is a wild one, the bottom bad, and the tide very strong, yet offers good shelter from south-west winds, and might be occupied with advantage during the existence of a gale from that quarter, which is so unfavourable for ships bound round the Horn.

After passing Staten Island, if the wind be westerly, the ship should be kept upon the starboard tack, unless it veer to the southward of S.S.W., until she reaches the latitude of 60° South, and then upon that tack on which most westing may be made. In this parallel, however, the wind is thought to prevail more from the eastward than from any other quarter. Never having passed round Cape Horn in the summer season, I may not perhaps be justified in opposing my opinion to that of others, who, having tried both seasons, give the preference to the summer months. The average of long days is certainly very great, but, from my experience of the winds and weather during these opposite seasons at Port Famine, I preferred the winter passage, and in our subsequent experience of it found no reason to alter my opinion. Easterly and northerly winds prevail in the winter off the Cape, whilst southerly and westerly winds are constant during the summer months; and not only are the winds more favourable in the winter, but they are moderate in comparison to the fury of the summer gales.

Having passed the meridian of Cape Pillar, it will yet be advisable to take every opportunity of making westing in preference to northing, until the meridian of 82° or 84° be reached, which will enable a ship to steer through the north-westerly winds that prevail between the parallels of 50° and 54°.

Being to the North of Staten Island for three days preceding full moon, which occurred on the 3rd of April (1829), we had very foggy weather, with light winds from the eastward and northward, causing a fall of the mercury from 29·90 to 29·56. On the day of full moon the column rose, and we had a beautiful morning, during which the high mountains of Staten Island were quite unclouded, as were also those of Tierra del Fuego. At noon, however, a fresh gale from the S.W. set in, and enveloped the land with a dense mist. No sooner had the wind changed than the mercury rose to 29·95, but fell again the next morning; and with the descent the wind veered round to N.W., and blew strongly with thick cloudy weather and rain, which continued until the following noon, when the wind veered to S.W., the barometer, at 29·54, having slightly risen; but after the change it fell, and continued to descend gradually until midnight, when we had a fresh gale from W.S.W. When this wind set in, the mercury rose, and continued to rise, as the wind veered, without decreasing in strength, to S.S.W., until it reached 29·95, when it fell again, and the weather moderated, but without any change of wind. During the descent of the mercury the sky was dull and overcast, with squalls of wind and rain, but on shore it seemed to be very fine sunshiny weather.

The column now fell to 29·23, and during its descent the weather remained the same, dull and showery; but as soon as the mercury became stationary, a fresh breeze set in from the southward, with fine weather.

After this, to new moon, the weather was very unsettled, the wind veering between South and W.S.W.; the barometer rising as it veered to the former, and falling as it became more westerly, but on no occasion did it precede the change.

The mean height of the barometer is about 29·5.

The mercury stands lowest with N.W. winds, and highest with S.E.

With the wind at N.W. or northerly the mercury is low; if it falls to 29 inches or 29·80, a S.W. gale may be expected, but it will not commence until the column has ceased to descend. It frequently however falls without being followed by this change. In the month of June, at Port Famine, the barometer fell to 28·17, and afterwards gradually rose to 30·5, which was followed by cold weather, in which the thermometer stood at 12°.

The difficulties which present themselves to navigators in passing round Cape Horn, as well from adverse winds as the severe gales and heavy sea to which they are exposed, are so great, that the Strait of Magalhaens has naturally been looked to as a route by which they may be avoided. Hitherto no chart has existed in which much confidence could be placed; but by the present survey the navigation through it, independent of wind and weather, has been rendered much easier, since a correct delineation of its shores, and plans of the anchorages, have been made; and sufficient descriptions of them have been given to assure the navigator of his place, and furnish him with advice as to his proceedings. The local difficulties, therefore, have been removed; but there remain much more serious ones, which I should not recommend a large, or even any but a very active and fast sailing square-rigged vessel to encounter, unless detention be not an object of importance.

ROUTES FOR RETURNING FROM BRASIL TO EUROPE.

As the *Land Breezes* of Brasil are nearly the same along the whole of the coast, and during the greater part of the year, the day and hour of departure may be always fixed. It has been noticed that these breezes rise during the night, and are generally very fresh during the early part of the day; as they continue for nine or ten hours, you have consequently every advantage for preparation, and for standing off to a distance from the coast, free from all local obstacles.

The Baron Roussin has treated rather copiously on the routes to be adopted in sailing from the different ports; but his rules appear to be such as will naturally suggest themselves to the mind of a seaman, on a consideration of the prevalent winds, currents, &c.

The strength of N.E. winds often force vessels when bound from ports *South of Cape Frio*, on their return to Europe, to keep close on the larboard tack for 12 or 15 days, and descend to the S.E. or S.S.E. to the parallel of 28°, or even of 32°.[*] In advancing from the southward, you ought to attain the meridian of, and sight the Island of Trinidad, in 20° 31′ S. and 29° 19′ W.; then tack about and leave the island on the starboard side, as you cannot always double the projecting points on the eastern shore. On proceeding hence, northward, the winds will be found nearly approaching East and S.E., and so facilitate the proper route. By acting in this way, it will rarely happen that you cannot pass to windward of the Isle Fernando Noronha, and cross the Line between the 28th and 36th degrees of longitude (West of Greenwich), or, if circumstances require it, one or two degrees more to the West.

On *quitting Pernambuco*, or the points in its vicinity, you may not always be able to get to the northward on the starboard tack. The direction of this coast inclines from the North to the West, and the winds are mostly from the eastward; but, at the same time, you may gain a good offing in directing your course to the northward. Should, however, the winds not permit you to proceed freely on this route, it will be preferable to make a long board to the S.E., and then act according to circumstances.

THE NORTHERN COAST.

Between POINT TOIRO (*the N.E. extremity of Brasil*) and the Isle of *Maranham* the general direction of the coast is W.N.W., and there is no difficulty in proceeding along it with the prevailing winds. During five-sixths of the year these winds blow from E.S.E. to E.N.E., and it is easy to go to the North, and to even gain a little to the East, by governing the starboard tacks.

In *quitting the port of Maranham*, and proceeding thence northward, a favourable wind is required, and care must be taken to avoid the dangerous shoal of *Manoel Luiz*, hereafter described. By anchoring for thirty hours, near the edge of this shoal, it was found that the tides set regularly six hours each way, the flood to the S.W., and the ebb to the N.E., nearly with the same strength. The rise and fall was 12 feet. These remarks have been confirmed by others made by Lieut. Lartigue, in a vessel called the *Lyonnaise*, in 1826, who found the alternate streams to run at the rate of 1 mile an hour.

The combination of tide and current hereabout renders it necessary to be very circumspect when entering and leaving the Bay of S. Marcos, or in sailing between it and the shoal of Manoel Luiz, as the streams may be very variable.

---

[*] RIO JANEIRO to CAPE FRIO, &c.—Mr. Wood says, "Between the months of September and March, when the northerly winds prevail, as well as a current to the southward, it is advisable, after doubling Cape Frio, to stand to the eastward into the tracks of the Indiamen, endeavouring, if possible, to keep within the tropic; as it is of little service to go round unless you can weather the land on the other tack, as the wind always heads you as you draw in shore, besides a current on your weather bow.

The Tartar was (by observation daily) affected by the *Equatorial Current* between the latitudes of 0° 8′ N. and 4° 53′ N. (longitude 24° 30′ W.) in a period of three days, 87 miles N. 44° 27′ W. *true, equal to 29 miles per day.*—(Nov., 1825.)

REMARKS ON THE PASSAGE FROM BRASIL TO ENGLAND, WITH SOME OTHERS ON BAHIA, &C. ABSTRACTED FROM THE NARRATIVE OF A PASSENGER, ON A VOYAGE FROM NEW SOUTH WALES, IN 1824.*

1824.—*April* 12.—On this day we crossed the tropic of Capricorn, and I saw the Great Bear for the first time for more than seven years:—

> The northern team,
> And great Orion's more refulgent beam,
> To which, around the axle of the sky,
> The Bear, revolving, points his golden eye.

On the 15th we met a brig 10 miles off, and on the 17th another, standing to the S.W. These were proofs of our drawing near the coast of Brasil; and, on the 20th, the land was in sight, the city of S. SALVADOR, in the province of Bahia, lat. 12° 59', lon. 38° 28', according to one reckoning; 38° 21' according to another.† Two ships were in sight, also standing for the harbour of Bahia; and in the afternoon we came to anchor there.

We found Bahia in the possession of the Brasilians, and the Portuguese either expelled or hiding themselves. The very children in the streets were singing *Liberty*. The imperial flag was hoisted on the fort, and flying on the ships of war.

I went on shore this evening, and called, as is the etiquette, upon the British consul, who lives at *Vittoria*, in the Upper or New Town. This is almost an English settlement, and delightfully situated, with lanes, at least clean, if not trim, and gardens, or rather shrubberies, to each house, down to the sea. The mango and other tropical trees struck me with their rich leafiness, after the barrenness and dryness of Australian foliage. I found the white cedar, the *melia azedarach*, or common bead tree of India, growing here, as well as at New South Wales; and I particularly admired the splendour of that species of acacia called *Poinciana pulcherrima*, or the Barbadoes flower fence.

The Lower Town of Bahia, in which the English merchants have counting-houses only, is very close and disgusting; rather from filth and the manners of the Portuguese than from the mode of building; for narrow streets insure shade, and declivity of ground commands the sea breeze everywhere by its nature, and would command cleanliness with a very little art. There are many British merchants and shopkeepers settled here, corresponding principally with Liverpool. They are, as they are all over the world, the wealthiest and most respectable people in the place, and in favour with all parties, royalists, imperialists, and republicans.

The next afternoon I went on shore till my ship should sail, to enjoy the hospitality of my countrymen at Vittoria. I had no other claim to it than that of common country, but that was enough.

The weather favoured our little *relache*, and our ship completed her watering on the 23rd of April. I had, therefore, no time to visit the interior of the country, to which, indeed, there are no roads; but I perambulated the city of Bahia with great diligence, both in *caderas* and on horseback. The streets are too steep for carriages, although the hill on which the town is built is not 600 feet high (as the books say), but a little more than 200. The caderas, or curtained chairs, which are used as much by gentlemen as by ladies, are carried obliquely, with only one pole to the top of the chair on the shoulder of each of two negroes; so that each may see his way before him, and the sitter enjoy the thorough breeze and see before him too, if he chooses to open the curtains.

As it was the season of the carnival, and this city was once the ecclesiastical metropolis of Brasil, we expected to witness the masquerading holydays of the Roman Catholic religion. But the revolution had left priests at a heavy discount. We found the saint-cupboards in the street shut up, and the carnival was forbidden by the governor, from fear of political riot.

On Sunday, the 25th, I visited the public garden in the fort of St. Peter, presenting a fine terrace to the sea. In the afternoon I re-embarked, with oranges and limes, though they kept not long, and pleased with Bahia, although I did not find it so musical and romantic as Rio Janeiro.

The climate of Bahia is not oppressive to a visitor; but it must be tiresome to a resident to have the thermometer all the year round from 75° to 85°. Winter rains induce the lower degree, and the higher is always relieved by a sea breeze.

---

* More amusing, perhaps, than practically useful; but certainly pleasing and illustrative; *therefore* given as a supplement to the preceding descriptions.—ED.

† *But see, with regard to position,* the preceding table.—ED.

The oranges of Bahia are particularly fine. They are seedless in the main core. The seeds are in a little perfect sub-orange at the top of the other, which gives the fruit somewhat of a pear shape, with the seed-chamber divisions indicated in the rind of this little top-orange. The ant is a great enemy of this fruit tree. Its armies will strip an orange tree in a night. They surmount all difficulties. Fire at night is the only remedy.

The only manufactory at Bahia is of red pottery. The various water vessels are peculiarly adapted to this warm climate.

We sailed from Bahia in the afternoon of the 26th of April, with a S.E. wind and showery weather; and so the wind and weather continued, and prevented us from clearing the land till the 3rd day of May. In addition to this foulness of wind we now found a foul ship. On the 5th of May we saw a *Portuguese man-of war;* not a ship, but a species of zoophyte of the Medusa kind: and in the evening we passed the high pyramidal peak of the Island Fernando Noronha, distant 6 or 7 leagues to the eastward, rising like a spire.

On the 8th of May we crossed the Line in lon. 32° 30′, and were becalmed for only two days, with rain for only one; after which we had the N.E. trade wind till the 2nd of June, when we were in lat. 35° 55′, and in the Florida or Gulf Stream. On the 13th of May the wind was light, with heavy rain all day; and on the next evening, which was showery, we saw a *lunar rainbow*, a phenomenon which I had witnessed only once before, and which many people die of old age without seeing.

On the 22nd (May), being in lat. 20° 7′, the sun was vertical at noon, yet the thermometer was only 75°. This is a wonderful sight, and yet thousands, who visit the tropics, notice it not. Shine, but no sun, till you look over head; and, what is more awful—

"Your form no darkling shadow throws
Upon the vessel's deck."

A vertical sun is as much a miracle to an extra-tropical inhabitant, as snow and ice to an inter-tropical one.

On the next day, at evening, we met a brig; and much seaweed was seen all day. It seemed to be all of one sort, namely, the *fucus natans.*

On the 24th of May we crossed the tropic of Cancer, and on that and the three following days the seaweed was very abundant. When gathered, small crabs and shrimps, as usual, came up among it.

On the 30th of May, the wind being light and the weather fair, we saw half a dozen dolphins, with their ultramarine blue bodies and their orange-green tails; but they would not bite a bait. We also passed a brig.

Eight weeks have now elapsed, during which we have had the thermometer from 75° to 83°, both night and day. From this time the heat fell to a common English summer temperature.

On the next day (31st), which was rainy and cloudy, instead of dolphins, stormy petrels were very numerous under the stern of the ship; and, on the following day, came a strong breeze and a high sea, producing heavy rolling. We passed a schooner, showing English colours. The day after the sea was still high, and the wind fresh at N.W., with heavy rain in the evening, which latter continued the next day. With the exception of one day, we had now a fair wind till we entered the English Channel. On the 4th of June we passed a brig, which afterward overtook and spoke us; namely, the *Nocton Packet*, from the Island of St. Thomas to England. On the next day the wind was stronger, and the ship more uneasy and wet than ever: we were out of the Gulf Stream, and on the following morning passed the Islands of Flores and Corvo, the two northwesternmost of the Azores, or Western Islands. Flores looked verdant, but Corvo little better than a lofty rock.

We were now drawing near home, and the converging of outward and homeward bound vessels. On the 9th of June we passed a ship, and on the next day met a large one; on the 13th we met a brig, and saw two or three other vessels in the Chops of the Channel. The next day a vessel was in sight, and the sea was *green*, the ship being in soundings. We were out of blue water. The following morning several vessels were in sight; in the afternoon we saw the land, Start Point, in Old England; and, late at night, *we discerned the Portland lights.* On the next day we were off Portland and St.

Alban's Head; but the wind was foul: a mortifying circumstance with home in sight. An Isle of Wight pilot came on board, and we had that island in sight all day. The next morning the weather was wet, and the land out of sight. At noon of the 17th of June we tacked toward England, and made St. Catharine's, on the Isle of Wight, at 3ʰ p.m., when the wind continuing obstinately foul, I went on shore in the pilot boat, and landed at Portsmouth at the same hour the next morning. The sea was smooth, and the sail pleasant. We came round the Needles, and up the Solent or West Channel.

So ends this journal of a voyage of 131 days at sea.

"The boundless ocean!" If it be meant to give the effect of a view of "sea without shore," it is quite a mistake to describe it as the *boundless ocean*. It appears to be completely bounded; and that too at the very short distance of 3 or 4 miles all round. The *melancholy* main is, in my mind, the most correct epithet that poetry has ever applied to the sea.

TABLES of the WINDS, CURRENTS, and VARIATIONS of the COMPASS, as observed in the Voyages of the Corvette *Bayadère* from FRANCE to BRASIL, in 1819; from FRANCE to the RIVER PLATA, in 1821 and 1822; and from BRASIL to FRANCE, in 1823. By CAPTAIN, now BARON ROUSSIN, Rear-Admiral, Member of the French Council of Admiralty, &c.

I.—THE PASSAGE FROM ROCHEFORT TO ST. CATHERINE'S IN BRASIL, 1819.

Dates.	Winds from one Noon to another.	Lat. at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
1819.	*By true meridian.*	*North.*	*West.*	*West.*	
Feb. 14	Leave Rochefort.	° ′	° ′	° ′	Miles.
15	E. to S.S.W.	45 54	2 30	25 45	None
16	S.S.W. to W.	46 31	5 32	25 30	North 3
17	S.W. to W.N.W.	46 7	7 9	25 30	None
18	S.W. and W.N.W.	47 57	7 40	25 0	North 6
19	S.W. and N.W.	47 56	8 46	25 0	E.N.E. 6
20	S.S.W. and N.W.	47 14	9 57	24 30	East 7
21	W.N.W.	45 6	10 34	24 26	S.E. 8
22	North and W.N.W.	42 43	11 40	24 15	S.S.E. 24
23	North and N.E.	40 3	12 47	24 40	S.S.E. 12
24	N.E.	37 4	13 44	23 20	S.S.E. 12
25	N.E. and S.E.	34 13	12 36	22 30	S.E. 6
26	North and N.E.	31 9	14 11	22 3	S. 10° E. 12
27	North and N.E.	28 45	15 25	21 0	N.E. 10
	Santa Cruz, Tenerife.	28 28	16 13	19 30	
Mar. 19	E.N.E. and E.S.E.	27 20	16 32	19 30	South-easterly.
20	S.S.E. and E.N.E.	26 38	17 35	19 0	S.E. 9
21	S.E. and N.N.E.	24 6	17 56	19 0	S.E. 11
22	N.E. and East.	21 50	19 11	18 30	S.E. 12
23	N.E. and E.N.E.	19 34	20 16	17 39	S.W. 8
24	N.E. and East	16 51	20 42	18 0	W.S.W. 12
25	N.E. and East	14 26	20 46	17 0	N.N.W. 11
26	N.E. and North	12 43	20 29	16 42	W.N.W. 10
27	N.N.E. and N.N.W.	10 52	20 0	16 40	W.S.W. 5
28	N.N.W. and N.N.E.	8 53	20 31	17 0	E. by N. 6
29	E.S.E. and North	7 28	19 13	16 40	East 3
30	W.N.W. to E. (by the N.)	6 13	19 1	15 0	S. 10° E. 7
31	North and N.E.	4 31	18 36	15 0	S. 6° E. 15
April 1	E.N.E.	4 15	17 41	15 0	S.E. 11
2	E.S.E. to N.W. (by the S.)	3 30	17 17	15 5	East 11
3	S.E. to W. (by the S.)	3 0	17 0	15 0	E.S.E. 9½
4	Calm	2 40	16 52	14 50	S.S.E. 10
5	Calm	2 17	16 45	15 0	S.E. 12
6	Calm	1 58	16 40	14 0	East 14
7	*All round the compass*	1 33	16 36	16 0	S. 7° E. 13

The Passage from Rochefort to St. Catherine's in Brasil. (Continued.)

Dates.	Winds from one Noon to another.	Lat. at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
	By true Meridian.	*North.* ° ′	*West.* ° ′	*West.* ° ′	
1819.					Miles.
April 8	Calm	1 18	16 9	15 0	S. 25° E. ...14
9	W.S.W.	1 10	15 50	15 0	S.E. 17
10	West	1 5	15 45	14 47	East 16½
11	W. to E. (by the S.)	1 0	15 46	15 0	S.E. 15
12	Calm	0 47	15 48	14 35	E.S.E. 15
13	Calm	0 0	15 41	14 30	E. 2° S. ...11
		South.			
14	Calm	1 0	14 51	14 10	S.S.E. 17
15	All round the compass	1 15	14 25	14 0	South 15
16	The same	1 30	14 14	14 0	S. 5° E.......15
17	E.N.E.	1 50	13 55	14 7	S. 40° E. ...20
18	East	2 10	13 40	14 0	S. 11 E. ...21
19	South	2 38	13 20	14 0	S. 20 E. ...27
20	S.S.W.	2 50	13 46	13 50	S. 45 E. ...13
21	S.S.W.	3 15	13 55	14 0	South 26
22	S.W.	4 16	16 10	15 0	S. 57° W....17
23	S.W.	6 45	17 12	13 49	(Doubtful.)
24	W.S.W	8 10	18 25	13 50	W. 2° S. ...19
25	W.S.W	9 56	20 52	13 0	S. 58° E. ... 5
26	From S. to S.E	12 46	23 25	11 0	South 5
27	S.S.E.	14 1	26 40	8 20	N. 40° W... 9
28	S.S.E.	15 6	28 37	9 0	W. 1° N. ...12
29	S.E.	16 26	29 51	8 0	S. 29° W.... 8
30	E.S.E.	17 15	30 43	6 0	S. 75 W. ... 9½
May 1	E.S.E.	17 55	30 59	5 30	S. 50 W. ... 6
2	E.S.E. to W.N.W. (by the S.)	18 44	31 57	3 0	S. 27 E. ...12
3	W.N.W. to N.E. (by the S.)	19 53	32 34	2 25	South 6
4	S.S.W. to E.S.E. (by the S.)	21 41	34 43	2 0	South 1
5	N.E. to S.E. (by the N.)	22 48	36 40	0 14	N. 3° W. ... 8
				East.	
6	N.W. to S.E. (by the W.)	24 11	38 21	1 0	S. 23° W.... 5
7	E.S.E.	25 34	41 22	1 0	N. 11° W...15
8	N.E. to S.E. (by the E.)	26 55	44 27	3 0	N. 1° W. 5
9	W.N.W. to N.E. (by the N.)	28 4	46 12	5 26	S. 50° W. 6
10	W.S.W. to S.E. (by the S.)	27 36	48 31	7 29	West 8
	Arrived at the anchorage in the Gullet of St. Catherine.				

II.—THE PASSAGE FROM BREST TO THE RIVER PLATA, IN 1821–22.

Dates.	Winds from one Noon to another.	Lat at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
1821.	*By true Meridian.*	*North.* ° ′	*West.* ° ′	*West.* ° ′	
Oct. 28	Leave Brest Harbour.				Miles.
29	S.S.E. to S.S.W. (by the S.)	47 35	6 28	26 0	South 10
30	S.W.	46 36	8 25	26 0	S. 15° W....13
31	S.W. to W.N.W. (by the W.)	44 53	8 36	25 15	S. 10° W....13
Nov. 1	W.S.W. and West	44 45	8 40	25 0	S. 2° W. ... 7
2	S.W. and W.N.W.	44 42	10 10	25 0	S. 4° W. ... 4
3	W.S.W.	45 18	11 49	26 0	S. 2° W. ... 6
4	W.S.W. to E.N.E. (by the N.)	44 29	12 59	25 20	South 6
5	N.E. and S.E.	41 29	13 30	25 0	N. 50° E.... 6
6	S.W. and S.S.E.	40 25	14 30	25 0	S. 15° E. ...20
7	S.W. and South	40 33	15 15	24 30	S. 16° E. ... 8
8	West	39 34	14 0	24 30	S. 10° E. ... 5
9	West and N.W.	37 4	13 57	24 0	S. 40° E. ... 6
10	West and N.W.	35 21	15 54	23 0	S. 45° E. ...15

The Passage from Brest to the River Plata. (Continued.)

Dates.	Winds from one Noon to another.	Lat. at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
		North.	*West.*	*West.*	
1821.	*By true Meridian.*	° ′	° ′	° ′	Miles.
Nov. 11	W.N.W. and W.S.W.	33 54	12 48	21 30	S. 5° E....... 6
12	West and W.S.W.	34 18	12 21	20. 0	S. 25° E. ...25
13	S.W.	34 15	12 13	20 15	S. 20° E. ...20
14	S.W. and W.S.W.	33 16	12 19	20 15	S. 15° E. ... 6
15	S.W.	32 56	13 16	20 0	W.S.W. ...32
16	S.W. and S.S.W.	32 8	15 17	20 0	S. 40° W....15
17	S.W. and S.S.W.	32 13	14 40	20 0	E. 2° S. ...10
18	S.S.W. to E.S.E. (by the N.)	31 30	14 30	21 0	E. 4° S. ...20
19	S.S.W. to E.S.E. (by the N.)	30 29	15 20	21 0	E. southerly 18
20	South and E.S.E.	28 18	15 35	20 0	S. 3° E. 8
21	S.E. and E.S.E.	28 28	16 13	19 5	S. 6° E. ... 6
22	At Santa Cruz to November 30	28 28	16 13	19 30	
30	East and E.S.E.	25 59	17 1	19 0	E. 10° S. ...13
Dec. 1	E.N.E. and S.E.	23 14	18 6	19 0	South 6
2	E.N.E. and S.E.	20 45	18 1	18 0	S. 40 E. ...10
3	S.E. and E.N.E.	18 26	19 29	18 0	N.W. 1
4	E.N.E. and E.S.E.	15 18	19 15	17 0	S. 3° E. ... 9
5	East	12 42	18 7	17 0	E.N.E.......18
6	E.N.E. and North	10 59	18 9	17 0	W.S.W. ...10
7	N.N.E.	10 0	17 55	16 0	E.S.E. 6
8	N.N.E.	8 53	17 35	16 20	East 6
9	N.N.E.	7 53	17 38	16 20	West.........15
10	N.N.W.	7 10	17 34	16 0	East 2
11	W.S.W. to W.N.W. (by the W.)	6 11	17 15	16 30	E.S.E. 12
12	W.N.W.	4 50	16 44	16 0	E.S.E. 22
13	S.E. to S.W. (by the S.)	4 22	16 42	16 0	E.S.E. 16
14	S.W. and S.	4 13	16 26	16 30	E. 10° S....39
15	From N. to S. calm	4 11	16 32	16 30	W. 5° N. ...20
16		3 25	17 20	16 0	W. 46° S....20
17	S.E. and E.N.E.	2 25	17 40	16 20	W. 55° S....20
18	E.S.E.	1 13	18 23	15 30	W. 2° N. ...12
19	East and S.S.E.	0 3	19 34	15 0	W. 4° N. ...28
		South.			
20	South and S.E.	0 42	18 59	15 0	W. 1° S. ...27
21	S.S.E.	1 47	21 30	15 0	W. 1° S. ...26
22	S.E.	3 3	23 51	14 0	S. 15° W.... 9
23	E.S.E. and S.S.E.	2 38	23 37	14 0	N. 6° W. ...11
24	S.S.E.	6 35	24 45	13 0	N. 45° W....20
25	S.E. and E.S.E.	8 59	26 2	12 0	N. 55 W....14
26	S.S.E. and E.S.E.	11 22	27 12	11 0	N. 40 W.... 8
27	S.S.E. and E.S.E.	13 47	27 33	10 0	N. 50 W.... 7
28	S.S.E. and E.S.E.	15 52	30 4	9 20	N. 45 W....10
29	E.N.E.	17 51	31 24	8 0	N. 40 W.... 6
30	N.E.	19 17	32 38	6 0	S. 5° E. ... 4
1822.31	N.E. to N.N.W. (by the N.)	21 1	34 3	4 0	S. 60° E. ... 8
Jan. 1	N.E. and W.N.W.	23 5	36 2	3 0	South 1½
2	S.E. and South	23 47	37 45	0 20	North 2
3	S.S.E.	24 27	39 15	......	E. 3° S. ... 9
4	E.S.E.	25 18	40 24	......	N. 45° E.... 4
				East.	
5	S.S.E.	25 49	41 32	1 0	E. 22° N....15
6	E.S.E.	27 22	44 1	2 0	S.W.......... 3
7	East	29 35	46 28	4 20	E. 23° N....12
8	E.N.E. and North	32 1	49 35	5 30	W. 15° N....13
9	N.W. and N.N.E.	33 35	52 4	6 30	East 7
10	S.E. to N.N.E. (by the E.)	34 46	54 5	7 0	South 9
	Arrived in the Road of Maldonado.				

III.—THE PASSAGE FROM RIO JANEIRO TO BREST, IN 1823.

Dates.	Winds from one Noon to another.	Lat. at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
	By true Meridian.	*South.*	*West.*	*East.*	
1823.	Leave Rio Janeiro.	° ′	° ′	° ′	Miles.
Sept. 25	E.S.E.	22 53	43 15	3 30	None.
26	E.N.E.	23 25	43 4	2 0	E.S.E. 11
27	E.N.E.	24 50	42 3	1 20	West.........18
28	E.N.E.	26 40	41 19	2 0	S. 10° E. ...25
29	E.N.E.	28 10	40 14	2 0	S. 5° E......32
30	E.N.E. to W.S.W. (by the S.)	28 33	39 2	2 0	S. 3° E......15
Oct. 1	S.W.	27 11	37 7	2 0	S. 20° E. ... 8
2	S.S.E. to N.W. (by the N.)	26 58	35 58	2 0	E. 22° N....18
3	North	26 3	33 38	1 10	N.E..........12
4	N.N.W.	25 16	31 10	1 0	N. 8° E. ...16
				West.	
5	N.E.	25 19	29 48	2 0	East 15
6	E.N.E.	26 9	27 51	4 0	East 15
7	N.N.E.	26 36	25 9	5 0	N. 50° E....13
8	N.N.E.	26 0	22 50	5 20	N. 45° E....12
9	N.N.W.	25 11	21 20	8 0	N. 30° E....10
10	E.S.E. and East	24 31	21 15	9 0	N. 25° E.... 7
11	East and E.S.E.	22 1	21 58	9 0	S. 10° E. ... 4
12	N.N.E.	20 19	22 52	9 40	W. 5° S. ...13
13	North	18 51	24 29	10 0	West.........15
14	E.N.E.	17 9	25 57	8 0	W. 4° S. ...12
15	E.N.E.	15 10	26 49	8 0	West......... 9
16	E.N.E.	13 22	27 35	8 0	S. 50° W....18
17	E.S.E.	9 10	27 46	8 0	West.........17
18	E.N.E.	11 30	27 44	8 0	S. 3° W. ...12
19	East	6 24	27 43	8 0	W. 15° S....14
20	E.S.E.	3 53	27 50	8 26	W. 5° S. ...33
21	S.S.E.	1 11	27 41	9 0	West.........23
		North.			
22	S.E.	1 4	27 41	10 0	West.........31
23	N.N.E. and S.E.	2 48	27 47	10 0	S. 45° W....10
24	E.S.E. and W.S.W.	4 18	27 42	9 56	N.N.W...... 5
25	S.S.W.	6 2	27 32	11 0	South 3
26	South	7 46	26 58	11 0	East 20
27	S.W.	9 40	26 24	11 10	N.E..........30
28	From S.W. to N.E. (by the N.)	10 25	26 25	12 0	N.W. 12
29	East	11 27	26 38	12 0	N. 15° W...14
30	East	12 34	26 51	13 30	N. 45° W...10
31	E.N.E.	13 35	27 5	13 5	N. 55° W...10
Nov. 1	E.N.E.	15 11	27 55	14 0	W. 20° N...13
2	E.N.E.	16 54	28 33	14 0	W. 20° N...24
3	E.S.E.	19 5	28 47	15 0	N.W. 5
4	S.E.	20 44	28 47	15 0	North 12
5	S.S.W.	22 27	28 38	16 0	N. 2° E. ...14
6	From S.E. to W. (by the S.)	23 5	28 15	17 0	N. 20° E. ...12
7	Calm, N.W.	23 9	28 48	17 32	S.W......... 7
8	E.N.E.	23 53	28 28	18 0	East 4
9	E.N.E.	25 33	28 58	18 0	North 4
10	East	27 27	29 25	19 0	N.N.E.......15
11	East	29 9	30 12	19 0	W. 5° S. ...12
12	N.E.	30 9	30 56	19 0	S. 2° W. ...14
13	North	30 42	31 56	20 0	S. 20° W....14
14	E.N.E.	31 46	32 46	20 43	S. 7° W. ...15
15	E.N.E. to S.W. (by the S.)	32 2	32 53	20 25	South 3
16	South	35 23	32 7	21 0	None.

The Passage from Rio Janeiro to Brest. (Continued.)

Dates.	Winds from one Noon to another.	Lat. at Noon.	Lon. at Noon.	Va. of Needle.	Current in the 24 hours.
1823.	*By true Meridian.*	*North.* ° ′	*West.* ° ′	*West.* ° ′	Miles.
Nov. 17	E.N.E.	35 40	32 46	21 0	W.S.W. ... 8
18	North	35 36	31 20	21 0	South 12
19	E.N.E.	36 26	32 11	21 0	N.W. 5
20	E. to W.S.W. (by the S.)	36 48	33 25	22 0	S. 46° W....23
21	N.N.E. to W.S.W. (by the W.)	37 42	31 16	22 0	S. 20° W....24
22	N.N.W.	38 14	27 43	23 10	S. 8° W. ...24
23	N.N.W.	39 36	25 3	23 0	S. 65° E. ...28
24	North	40 16	23 29	23 15	S. 50° E. ...13
25	East	40 26	22 53	23 0	S. 75° E. ...10
26	S.S.W.	41 49	19 15	23 0	S. 70° E. ...11
27	S.S.W.	no observation			
28	W.S.W.	no observation			
29	N.W. and West	46 24	10 15	25 0	East 9
30	West	48 22	6 33	22 0	E.N.E....... 7
Dec. 1	S.W.	48 11	5 59	22 30	N.E.......... 8
2	S.W.	48 23	5 8	27 0	N.E.......... 8
	Anchored in Brest Road at 9 p.m.				

DIRECTIONS FOR PROCEEDING TO THE ISLAND OF ASCENSION.

By a Master in the Royal Navy, 1830.

" In consequence of the very long passages that hired transports and chartered ships generally make between England and this island (owing principally to an imperfect knowledge of the strength, limits, and direction of the trade winds and currents), I am induced to suggest that a track may be pointed out to the masters and agents of transports, on their quitting England for Ascension, in order that so much delay and inconvenience to the service may be avoided.

" An opinion prevails that in going from England to Ascension a ship should, after losing the N.E. trade wind, go either the eastern or western passage; that is to say, either along the African or American coast. By going on either of these tracks, the time and distance will be lengthened, as these passages have generally occupied from ten to seventeen weeks. The *Salacia*, chartered ship, arrived here in one hundred and three days from the Downs; sixty-one days being employed between the Equator and Ascension !

" Let a ship from England make the best of her way into the N.E. trade wind, and having gained it, pass well to the westward of the Cape Verde Islands, to avoid calms, and shape a course for lon. 18° or 19° W. on the Equator; and so soon as she loses the N.E. trade wind, let every advantage be taken of making southing, without going farther West than 18° or 19° of West longitude. Being near the skirts of the S.E. trade wind, the wind will be found to blow from S. by W. to S.W. by S.; let her then stand on the starboard tack to make her easting in a track where there is smooth water and but little current, and cross the Equator in about 9° W., whence she will fetch Ascension, although she may not lay up for the island at first; for it is a general law within the limits of the trade winds, that their direction diverges, as from a centre of focal attraction, toward the coast of Africa as well as of America; and consequently, a ship being on a wind will come up, or lay higher, the farther she proceeds."

On referring to the chart the track, as above described, will be seen ; and the reasons will be clear, from the direction and set of the winds and currents, as described.

A description of the island, and its appearances from sea, is given in the next section.

PASSAGES TO AND FROM ST. HELENA.

As St. Helena lies within the region and strength of the S.E. trade wind, it is to be *reached in ships from the northward* by a circuitous route only, either eastward or westward of the island. The *Western Route*, which is always practicable, is nearly through the mid-ocean between St. Helena and the Brasilian coast, or rather toward the latter; thence south-eastward to the parallel of 23°, or thereabout, and again north-eastward and northward, so as to reach, with the advantage of both wind and current, the windward or eastern side of the island. The *Eastern Route* is, at times, the best; and it is to be recollected that ships proceeding this way, in the proper season, will be materially assisted by the *Guinea Current* to the northward of the Line, as well as by the *Equatorial Current*, flowing to the southward of it, in a succeeding part of their route. Here the information on the Currents by Colonel Sabine, already given in page 30, may be usefully applied, as well as that given by Mr. Finlaison, in the Directions for the African Coast, &c., hereafter.

Captain Horsburgh has said that, " By various examples of ships that have gone by the Eastern and Western Routes to St. Helena, combined with other information, it appears that the Eastern Route may be adopted in November, December, January, February, and March. If a ship bound to St. Helena cross the Equator in any of these months, and find the winds incline from south-westward, by standing to the S.E. across the Gulf of Guinea, close on a wind, and afterwards tacking as it veers to the East or West of South, she will most probably reach St. Helena in less time than if she had proceeded by the Western Route. From the time of losing the N.E. trade, forty or forty-four days to St. Helena may be considered a medium passage by the Eastern Route in these months, although it has been made in thirty-one days.

" From the southern limit of the N.E. trade, the passage by the Western Route is seldom accomplished in less than forty days. By this route forty-three days seem about the medium passage; and during any month of the year it may be made in this time from the situation above mentioned. The *Arniston* once made it in thirty-six days, in May, &c., but she did not proceed more to the South than to 25° of South latitude; and the *Ceres* once made it in twenty-one days from the Equator, not going beyond 22° 15′ S. When the sun has great northern declination, the Eastern Route seems precarious; the Western seems most certain at all times. A ship that sails indifferently, when close hauled or in light winds, should not attempt the Eastern Route in this season; but one that glides fast through the water in faint breezes, and holds a good wind, may probably proceed by the Eastern Route in any season with safety. It has been the practice with ships going the Western Route to run far South, sometimes to latitude 32° and 33°; but this can seldom be requisite, and it lengthens the passage. The ships which have not proceeded so far South have generally made the best passages to St. Helena.

" Before the use of chronometers and lunar observations, navigators were directed, in running for St. Helena, to fall into its parallel 50 or 60 leagues eastward of it, to lie by in the night, and steer West in the day till they made the land; this practice is no longer requisite, for most of the East India ships, homeward bound, now steer a direct course from the Cape to St. Helena, and make the island by day or night; as they generally know the longitude within a few miles of the truth, there can be little danger of missing it, although this is barely possible, the body and leeward part of the island being frequently enveloped in fog clouds, particularly in the night. Should a ship in such case fall a little to leeward, she will seldom find any difficulty in working up to the anchorage, unless she sail indifferently upon a wind, for the current seldom runs *strong* to leeward near this island: this, however, may happen when the Trade blows strong with squalls for a few days, which is sometimes experienced about the full and change of the moon; but this lee current is generally of short continuance. In time of war, when any of the enemy's cruisers visit St. Helena, they keep to the eastward and south-eastward of it, at the distance of 15, 20, and 25 leagues. Single ships, which sail well, would avoid these cruisers were they to make the island bearing from N.N.E. to East and S.E., and afterwards make short tacks under the lee of it till they reach the anchorage. I have seen store-ships from England make the island bearing E.S.E. directly to windward of them, at the distance of 15 or 18 leagues; they sailed indifferently, but reached the anchorage the third day after making the island."

"*From St. Helena to England* the passage with a fleet is generally about two months; or seven weeks in a single ship that sails well. *From the island to the Cape of Good Hope* the passage is about a month. From the Cape to St. Helena the passage may be estimated at thirteen days; it is frequently performed in ten, and has been accomplished in eight or nine days."

THE PASSAGE FROM ASCENSION AND ST. HELENA TO THE COAST OF AFRICA.

In proceeding eastward from these islands it has been recommended, first, to bear to the southward, and then make the easting; but this, perhaps, is not necessary, and a more direct course is practicable. On this track the following observations by Commander *H. J. Matson* will be interesting:—

"The compass direction of the winds I have scarcely ever found to vary in sixteen passages that I have made between the coast and the islands. It is easy to make the passage direct from the islands to the coast on the starboard tack; but until I made the passage from Ascension to the Congo, in February, 1840, it was the invariable practice of H.M. vessels to stand to the southward from Ascension until they could weather St. Helena, a dead beat of 700 or 800 miles. A stranger would certainly consider the latter to be the preferable route, for he would not believe it possible to reach Benguela (appearing to him 1,600 miles dead to windward) by keeping on the starboard tack; and the knowledge that the wind generally blows up the coast from the southward, with a lee current, would cause him to be more afraid of approaching the coast, and having to beat against it. Two precautions are however requisite, viz., not to go to the northward of 3° or 4° S., and not to bring your port to bear to the southward of S. 35° E. (true): an occasional short tack, as the wind veers a little, may therefore be necessary; but the whole passage may sometimes be made with a flowing sheet.

"Horsburgh and others recommend vessels, even when bound from St. Helena to Benguela, to stand to the southward, and run their longitude down with the westerly winds; whereby the passage is more than doubled. This must have been owing to a want of knowledge of the prevailing winds between the islands and the coast, which, as before stated, vary very little in their direction 100 miles off shore." *

THE PASSAGE FROM BRASIL TO THE CAPE OF GOOD HOPE, AND FROM THE CAPE TO ENGLAND.

BRASIL TO THE CAPE OF GOOD HOPE.

It has been shown that, during the greater part of the year, the S.E. trade wind fails about the tropic of Capricorn, or in lat 23½° S., and that here the wind is found to veer from the eastward to N.E. and more northerly; the latter prevailing more than any other in the vicinity of the S.E. trade, down to the parallels of 34° or 35° S. between the American coast and the meridian of Greenwich.

A vessel from Brasil, therefore, having advanced to the southward of the S.E. trade, will probably, in every season, meet with brisk winds veering from N.E. to N.W., and sometimes even so favourable as from West and W.S.W. But those most prevalent are from between N.W. and North, accompanied with fine weather and smooth water. If cloudy weather accompanies these northerly or N.W. winds, there is a risk of a sudden shift to S.W. or South, which may happen *instantaneously*, and must be guarded against.

In some "Notes" on the voyage of H.M.S. *Thunderer* to the Mauritius and back, Mr. H. Davy, M.R.N., observes, "The winds varied in circles the very opposite to those of the North Atlantic, and the phenomena attending them, although in exact accordance, were also in opposition. The wind at South goes to S.E., East, North, and what in England would be termed backing against the sun; so also it happens that a vessel may be running with a westerly breeze, and be taken aback with a south-easter. In like manner a vessel in our Atlantic, running with a S.E. wind, is liable to be taken aback with a north-wester, and many a goodly ship has met her doom by these instantaneous shifts. In both hemispheres those changes are preceded by lightning, and to the careful seaman it is only needful to forego the run, and place the ship on the tack she must come up on."

---

* *Nautical Magazine*, February, 1844, p. 105.

A ship, by running to the eastward, in the track of these winds, gradually increases her latitude southward, and often makes greater progress than by running down to 37° or 38°, where they may be found more westerly: for, although in these high latitudes westerly winds mostly prevail, the winds are very often unsettled, and sometimes shift around the horizon, in the course of the sun, every two, three, or four days, with intervening calms, particularly when prevalent from the south-westward. It is not, therefore, recommended to a ship to increase her latitude to more than 35° until she has reached the meridian of Greenwich: she may then, advancing toward the Cape, proceed into 36° or 37°: for southerly winds prevail around the Cape land from January to April, and sometimes in other months, and extend far to the westward, being commonly found between the Cape and the meridian of Greenwich: consequently it is prudent for a ship bound to the Cape, in this season, to increase her latitude to 35° or 35½°, on coming into *East longitude*. By thence keeping that parallel till in about 17° E. she will make the land, and enter Table Bay or False Bay, according to the directions given hereafter.

TRACKS, WINDS, AND WEATHER, OVER THE BANK OF AGULHAS.

After you have made the Cape of Good Hope, or after you have gained soundings on the Bank, if you keep between the parallels 36° and 38° of latitude, it will be high enough for your meeting with favourable winds. The westerly winds are more certain in a very high latitude than in a lower one; for in the high latitude the wind is very seldom from the North and N.E., and during the months of June, July, and August, scarcely continues thus for twelve or fourteen hours. When the wind then at any time veers from E.S.E. to N.E., you may expect it in a few hours at N.W. In all other months westerly winds here are more frequent than nearer shore.

The winds from N.W. to W.S.W. are those which occasion the highest seas to the eastward as well as to the westward of the Cape; though they do not blow with their greatest force but during the months of June, July, and August; yet it sometimes happens that in April or May you meet with very violent squalls from that quarter. These are generally foreseen by black clouds, which darken the horizon from N.W. to West, and so soon as you see these tokens you must prepare yourself, for they come on rapidly, and are sometimes accompanied with whirlwinds. They begin to blow violently from W.N.W. to West; then shifting to the S.W. they get to the South, when they abate, and it falls calm all on a sudden; but the sea, which they have agitated and swelled into mountains, is not so soon composed, and this, frequently, is of worse consequence than the gale itself.

About 150 leagues to the eastward of the Cape these storms are very frequent; the atmosphere is almost always on fire with lightning and thunder, followed by deluges of rain, so that you can scarcely ever enjoy two fair days together. The weather is thus tempestuous to the distance of 300 leagues farther; and several navigators have remarked that it continues quite to that meridian which passes through the eastern parts of Madagascar.

The preceding description is from the "*Oriental Navigator;*" the following from Captain *Horsburgh.*

"From September to April, which is the summer season, the S.E. winds are said to predominate in the vicinity of the Cape of Good Hope, and N.W. and westerly winds from April to October, which is the winter or stormy season. But it must be observed, that the S.E. winds are more constant on and near the Bank of Agulhas during part of January, the whole of February and March, than at any other time of the year. In April, also, they are expected, though in this month short gales from the westward frequently happen. In May the winds between N.W. and S.W. prevail more than the S.E. and easterly winds, sometimes blowing in hard gales along the edge of the Bank. In June these westerly and N.W. winds set in strong; during this month, July, and August, they blow with the greatest force, producing very high seas, and were it not for the help of the westerly current setting along the edge of the Bank, ships would find it very difficult to get round the Cape in these months. All ships from India which, on their passage to Europe, reach the eastern part of the Cape Bank from April to September, should be in good condition, if possible, and well prepared to resist bad weather, for they will be liable to encounter storms from W.N.W. to W.S.W., which may continue two or three days at a time, with short intervals of easterly and variable winds. Many ships, by not being in condition to resist these gales, have sprung leaks, and were obliged to bear away for St. Augustine's Bay, in Madagascar, to repair their damages; some ships have perished in these gales; some have anchored in the bays to the eastward of the Cape in great distress; and others reached Simon's Bay with much difficulty, where they repaired their damages, and refreshed their crews, worn out with fatigue.

" In August the westerly winds blow not so constant as in June and July, although very hard gales of short duration may be expected. On the 4th of August, 1801, we were in the *Anna*, near the eastern part of the Bank abreast of Algoa Bay, and got round the Cape of Good Hope on the 14th, having encountered a very severe storm of two days' continuance, from W.N.W. and West, in lon. 24° E. Westerly winds are also frequent in September, October, and November, and even in December ships have been beating round the Bank against westerly winds during the whole month, before doubling the Cape. They had sometimes very severe sudden squalls, but in general westerly gales are of short duration in this season, although they may blow very strong.

" Notwithstanding what has been mentioned above relative to winds, it sometimes happens that ships get easily round the Cape Bank to the westward in every month of the year; many have been known to get round in May, June, July, and August, more speedily than others in November and December, for the winds are often different in one season from what they are in another, even in the same month.

" Around the Cape Bank, as in the open sea far to the S.W., S.E., and southward of the Cape, the winds, in changing, follow the course of the sun, seldom veering from North to eastward, &c., but mostly from N.W. to West, S.W., and southward. After blowing strong from N.W. or West, if the wind should veer to S.W. and southward, it becomes light, or is succeeded by a calm. If a light breeze continues, it veers to south-eastward, where it may keep fixed for a considerable time; but not above a day, most probably, if it be the winter season. From S.E. it veers to East and N.E., then to N.E. and North. In the vicinity of the Bank the N.E. and northerly winds are very transitory; but in lat. 39° and 41° S. from the meridian of Cape Agulhas to 45° or 50° E. lon. the north-north-easterly winds frequently are experienced in both seasons, and sometimes blow steady for a day or two at a time.

" There are sometimes N.W. or westerly gales near and upon the Cape Bank, which blow very hard with a clear sky; but those most to be dreaded are generally preceded by heavy black clouds, rising from the N.W. and westward, with sometimes lightning issuing from them, or a noise of distant thunder; shortly after, the gale may be expected to commence by sudden gusts, or whirlwinds from the heavy dense clouds, and sometimes heavy showers of hail.

" When the wind at S.E. or E.S.E. shifted to north-eastward, the Dutch commanders were directed by the Company to take in the mainsail. If lightning appeared in the N.W. quarter, they were to wear and shorten sail; for in the first case they expected a hard gale at N.W.; and if lightning was seen in that direction, they thought the gale would commence in a sudden shift or whirlwind, which might be fatal, if they were taken aback.

" I have found the marine barometer of great utility in anticipating the storms near the Cape Bank, by a considerable fall of the mercury. A careful attention to this instrument, combined with the knowledge every navigator ought to obtain by observing the appearance of the atmosphere, and surface of the sea, or celestial orbs, will be sufficient to warn him of the approach of the storms. Although a fall of the mercury generally precedes a *gale* of *wind* in these latitudes, it is seldom disturbed by hard gales of *short duration*.

" In the vicinity of the Cape Bank, and in most parts of the southern hemisphere, the mercury *rises* with *southerly*, and *falls* with *northerly*, winds; these, proceeding from a warmer atmosphere, are more rarefied, consequently the mercury falls in the barometer; whereas southerly winds, coming from the frozen regions near the pole, are more dense, and cause the mercury to rise. This ought to be kept in remembrance; for I have several times, when the wind was from S.E., observed the mercury to fall considerably before it changed to the northward, and expected a gale; but the fall resulted only from the warmer air coming in contact with and repelling the former.

" *From the Cape Bank* to the meridian of the South end of Madagascar hard gales of wind happen in the winter season, accompanied with lightning, thunder, and much rain, which sometimes prove very dangerous to ships, particularly near the land.

"The *Britannia* and *Bombay Castle*, homeward bound, at different seasons, were struck by lightning off the Cape; the latter ship was near the land at Algoa Bay, in company with a fleet. These ships had each her foremast set on fire by the lightning, which penetrated from the head to the centre, bursting out in that part, and could not be got under. The Britannia was lying-to, at the time, in a storm. Both ships were fortunately saved by cutting away their foremasts, which fell clear of them in a body of fire.

"*In the storms off the Cape Bank*, and to the eastward, the sea is turbulent, and they are generally accompanied with a black overcast sky. When they are about to commence, and during their continuance, numbers of albatrosses, petrels, and other oceanic birds, are seen flying about, although in moderate weather few are perceived, for at this time they rest on the surface of the sea to fish, which they cannot do in a storm."

It has been noticed by Captain *W. F. Owen*, that there are two ways of avoiding the disagreeable effects of a strong weather current and high wind upon the southern coast of Africa; the first is, to push boldly in for the land, where the wind is generally found much less violent, and the sea comparatively smooth; but in doing this, if to the eastward of Cape Recife, a ship should not attempt, during the night, or in a fog, to approach the shore nearer than in 60 fathoms of soundings, unless her pilots are perfectly acquainted with the coast. During the day, however, there is no danger, and the land may be approached with perfect safety to within a reasonable distance, using, of course, proper judgment, and keeping a strict watch; while to the westward of Cape Recife, even at night, ships may stand in to 40 fathoms of soundings without any apprehension. The other mode of avoiding the heavy N.W. wind is to make a course to the southward, beyond the influence of the currents, until the return of fine weather; but as much ground is thus lost, the first proceeding is strongly recommended, as being equally certain, and not attended with any additional danger.

"When sailing along the shores of the Cape Colony, perhaps the most diversified and fertile in the world, with a climate unequalled, abundantly watered by extensive rivers, and the soil already fit for the plough, we could not but wonder that the people of Great Britain should prefer emigrating to the almost barren sands of Swan River, to resting at one half the distance upon such a land of promise as this."

CAPE OF GOOD HOPE TO ENGLAND.

The General Directions given to ships, on leaving the Cape for England, are as follow:—

Having rounded the Cape, a direct course for St. Helena is nearly N.N.W. ¼ W. by compass [*N.W. ½ W.*], 566 leagues: but prudence requires a course at first N.W. by N. until such a distance from the land is gained as to obviate all risk from squalls at N.W. and W.N.W., which, at times, are experienced near the coast. A direct course, N.N.W., will then be fair for the island.

With a strong wind, veering to the E.S.E., allowance for a leeward current should be made, particularly in cloudy weather, and when the longitude is uncertain. In this case, make the latitude of the island several leagues to the eastward of it. Then proceed to haul around the N.E. or Sugar-loaf Point for the anchorage, as shown hereafter.*

On quitting St. Helena, a direct course for Ascension may be taken. This is N.W. by N. by compass [*N.W. ½ W.*], distance 233 leagues. In this part a steady S.E. trade generally prevails throughout the year, and generally a westerly current. Ascension may be passed on either side, but the more common practice is to pass it on the West, at from 3 or 4 to 10 or 12 leagues.

From Ascension steer N.N.W. or N. by W. ½ W., so as to cross the Equator between the meridians of 18° and 25°, and thence proceed as shown in our Book for the Atlantic Ocean.

---

* A winter passage round the Cape of Good Hope, from the eastward to the westward, may depend on keeping in the stream of the Lagullas Current.—*Major* Rennell.

Extracts from Journals of the Ships Thames, Sir Andrew Hammond, and Leda, on their respective Passages from the Cape Bank to London. Selected with a view to elucidate a knowledge of the Currents, Winds, &c.

THAMES, Capt. Abr. Bristow, August, 1813. "August 17th, a.m., strong gales, westerly, lat. at noon, 33° 33′ S., lon. 29° 48′ E., p.m., thunder, lightning, and squalls.

18*th August*, lat. 33° 46′ S., lon. 28° 48′ E., strong gales, westerly, unsettled.—19*th*, 34° 50′ S., 25° 40′ E., light winds, southerly, high swell from westward; current S.W. or S.W. ½ W. full 1½ knots an hour.—20*th*, 36° 6′ S., 22° 15′ E., breeze from eastward. —21*st*, 36° 55′ S., 19° 45′ E., winds fresh in the N.E.—22*nd*, 37° 18′ S., 19° 37′ E., winds strong in the N.W. with hard gales.—23*rd*, 37° 56′ S., 20° 4′ E., strong gales at W.N.W., a tremendous sea, which stove the waist-boat to pieces.

24*th August*, 38° 20′ S., 20° 20′ E., violent gales in the N.W., heavy sea.—25*th*, 38° 33′ S., 20° 33′ E., hard gales in the N.W., with harder squalls, rain, and very high sea, which tore away some of the waist-boards.—26*th*, Hard gales westerly, with high sea. We are bound to the N.W., but these violent winds carry us to the S.E. Latter part strong winds at N.N.W., and a high sea. *I find, by my watch and observations, that we have been assisted by a favourable current during the gale;* at noon, 38° 20′ S., 18° 20′ E.

27*th August*, 38° 41′ S., 18° 40′ E., gales, with a high sea, increasing to a perfect storm.—28*th*, a perfect storm at N.W. *More wind, for such a continuance, than ever I before experienced in twenty-eight years' sufferance on a restless element.* Still lying hull-to.—29*th*, 37° 12′ S., 18° 0′ E., storm still violent, with dreadful squalls: have been forty-eight hours without canvas, in gales more awful than ever I before witnessed. I found, by observation at noon, that we had had *a strong current setting to the northward, and fortunately some westing in it.*

30*th August*, 36° 52′ S., 18° 0′ E., strong gales, westerly, with a high sea; latter part, wind in its old direction, and threatening to be more furious.—31*st*, 36° 1′ S., 17° 30′ E., strong gales westerly, with more sea than wind; middle part, winds southerly; latter, moderate breeze.

1*st September*, 35° 35′ S., 14° 46′ E., moderate winds easterly: the water, which for some days has been *discoloured*, begins to get blue again.—2*nd*, 34° 5′ S., 13° 47′ E., winds fair in the S.E. with fine weather.—3*rd*, 32° 30′ S., 12° 34′ E., wind continues fair in the S.E.; the water much discoloured, as if on soundings, and so continued till near noon, when it became blue again: light winds, in the latter part, got round to the northward.

4*th September*, 32° 57′ S., 11° 23′ E., wind variable in the N.W., weather fine.—5*th*, Wind in the N.W., hazy.—6*th*, 29° 57′ S., 9° 41′ E., moderate winds, westerly; a high swell from S.W.—7th, 28° 21′ S., 8° 28′ E., light winds westerly, heavy swell from the S.W.—8*th*, 26° 47′ S., 7° 16′ E., moderate winds southerly: fine weather.—9th, 25° 19′ S., 6° 14′ E., wind southerly; high swell from S. W.—10*th*, 24° 1′ S., 5° 17′ E., light winds southerly, fine weather.—11*th*, 22° 11′ S., 3° 57′ E., light winds southerly, fine weather.—12*th*, 20° 11′ S., 2° 31′ E., fine breezes in the S.E.; the last twenty-four hours lost much of the S.W. swell, and the pintado birds have now entirely left us.—13*th*, 18° 10′ S., 1° 15′ E., moderate breezes in the S.E.—14*th*, 16° 5′ S., 0° 4′ W., fine trades, cloudy.

15*th September*, Strong trades, cloudy. At noon was surprised to find my latitude 16° 27′ S. Hauled up immediately, N. by E., fearing I might have passed the island in being so much out in my latitude; though, by dead reckoning, since my last observation, we are still well to windward of it, in lon. 2° 56′ W. By watch, this morning, at 7^h, 4° 59′ W.

16*th September*, Moderate trades, with cloudy weather; saw many small white birds. At daybreak saw *St. Helena* bearing W. by N. ½ N. 5 leagues. Bore up for the island; and at 10^h a.m. anchored under Ladder Hill, with several other vessels in the roads. Moored with our kedge to the S.S.W.

The SIR ANDREW HAMMOND, Capt. Abr. Bristow, November, 1817.—20*th November*, lat. 28° 22′ S., lon. 32° 52′ E., wind northerly, middle and latter part, hard *gales.*—*21st*, 28° 40′ S′., 32° 30′ E., strong gales from the northward, with a high sea, *middle part variable*, with thunder, lightning, and rain; latter part a strong wind in the

S.W.—*22nd*, 28° 9′ S., 32° 54′ E., wind to the S.W. strong.—*23rd*, 28° 20′ S., 33° 5′ E., wind southerly, inclining to the East.—*24th*, 28° 46′ S., wind north-easterly and unsettled.—*25th*, 29° 6′ S., 32° 27′ E., wind, first northerly, then hard gales in the S.W.

26th November, 29° 17′ S., 32° 12′ E., hard gales in the S.W., middle and latter part more moderate.—*27th*, 29° 53′ S., 32° 6′ E., wind easterly, which increased to a storm in the N.E. with a prodigious sea: afterward shifted round to the westward, with hard gales.—*28th*, lat. 30° 4′, hard gales from W.S.W. with a high sea.—*29th*, lat. 30° 15′ S., hard gales in the S.W., succeeded by a high swell.—*30th*, 31° 28′ S., 32° 27′ E., wind easterly, with a heavy swell from the S.W., middle part increased to a heavy gale, and latter part a perfect storm, with a prodigious high, irregular sea. At the time of dinner, a wave broke into the cabin windows, washed all away, and gave captain and mate a complete soaking.

1st December, 30° 53′ S., 32° 47′ E., violent gales, with a very heavy sea; the wind then abated suddenly, and then became westerly, with a high swell against it from the N.E.—*2nd*, No observation, wind westerly, with a high swell from N.E.; the former increased to a strong gale from the S.W.—*3rd*, 32° 31′ S., about 33° E., Strong gales in the S.W., with a mountainous sea.—*4th*, 33° 29′ S., 32° 45′ E., Hard gales, with a high sea; the wind then moderated and shifted to the N.E.—5th, 33° 23′ S., 31° 0′ E., Strong gales in the N.E., hazy weather.—*6th*, Lat. 33° 18′, Wind in the S.W. with a high swell.—*7th*, 33° 34′ S., 29° 30′ E., Same as preceding day.—*8th*, 34° 31′ S., 27° 50′ E., same as two preceding days.

9th December, 35° 59′ S., 24° 50′ E., Wind easterly, with some hard gales.—*10th*, Weather the same.—*11th*, Calm at sunset, then a little wind in the N.E., thence North and N.W. The ship has now been on this coast for three weeks, and in the whole time there has scarcely been three days in which a boat could be lowered down, but one gale has closely followed another from all points of the compass, excepting S.E., and always a high sea or swell. Lat. at noon, 36° 48′, lon. 22° 40′.

12th December, Lat. 37° 0′, lon. 22° 50′, Hard gales in the N.W. with squalls of rain. —*13th*, No observation; hard gales westerly, with a high sea, which increased to a storm; at midnight a tremendous sea; at 1^h a.m. it blew a perfect hurricane, that lasted the twenty-four hours; at 11^h a.m. the body of a sea passed over the ship into the larboard quarter boat and wrecked it. No observation.

14th December, First part, the storm as above, and the sea passing over the ship as though she was a rock even with the surface of the water; the squalls dreadful, middle part it moderated some, but we continued to ship a deal of water, lat. obs., 37° 28′, lon. 24° E., by which it appears the storm has drifted us above a degree to leeward.—*15th*, Hard gales in the N.W., middle and latter part more wind. Lat. obs., 38° S.—*16th*, Hard gales, with harder squalls. Lat. 36° 57′ S., lon. 24° 10′ E.—*17th*, Little wind, with a high swell, middle part light winds, latter part mostly calm. Lat. 36° 54′, lon. 23° 38′.—*18th*, Mostly calm, but the swell keeps up; middle, the wind began to breeze in the N.W. Lat. 37° 35′, lon. 22° 53′. *19th*, Hard gales westerly. Lat. obs., 37° 34′ S., lon. 22° 50′ E.—*20th*, Hard gales westerly, by sunset the wind had increased to a perfect storm; middle part, the wind moderated. Lat. obs., 37° 32′ S., lon. 23° E.—*21st*, Wind westerly, with a high swell. Lat. obs., 37° 4′ S., lon. 22° 16′ E.—*22nd*, Swell high from the S.W., wind westerly. Lat. obs., 37° 26′, lon. 20° 40′ E.

23rd December, Strong winds, westerly, with a high swell; at 5^h p.m. just as we were driving the last nail into the boat under repair, a sea broke on board, and made her a complete wreck; latter part hard gales, with violent squalls, and a tremendous sea: by a glimpse of the sun our lat. was 38° 37′ S., lon. 20° 40′ E.—*24th*, Violent gales and a prodigious sea. Lat. obs., 38° 52′, lon. 19° 30′.

25th December, Hard gales in the S.W., with a very cross sea. Lat. obs., 38° 29′ S., lon. 17° 50′ E.—*26th*, Wind westerly, with fine weather. Lat. obs., 38° 19′ S., lon. 17° 30′ E.—*27th*, Wind northerly, with a swell from the westward. Lat. obs., 37° 18′ S., lon. 16° 20′ E.—*28th*, Wind westerly, middle part got round to the southward, and from thence to the S.E.; latter part, weather fine. Lat. obs., 36° 32′ S., lon. 14° 50′ E.

29th, Wind in the S.E., with a high swell from the W.S.W., weather fine; at 7^h a.m. got a set of distances, lon. 13° 50′ E., by the watch, 13° 31′ E. Lat. obs., 35° 17′ S., lon. 13° 14′ E.—*30th*, Wind northerly, middle part it freshened, and got round to the westward; at 8^h a.m. got a set of distances. Lon. 12° 51′ 30″, by watch, 12° 27′ E.

diff., 24′ 30″. Lat. obs., 34° 44′ S.—31*st*, Wind southerly, a very high swell from the westward. Lat. obs., 32° 48′, lon. 11° 0′ E.

1818, 1*st January*, Wind southerly, with a high swell from the westward, middle and latter part cloudy weather, the swell somewhat abated. Lat. obs., 30° 34′ S., lon. 7° 4′ E.—2*nd*, Moderate westerly winds, middle part it shifted to the southward. Lat. obs., 28° 35′ S., lon. 8° 40′ E.—3*rd*, Wind southerly. Lat. obs., 26° 34′ S., lon. 7° 4′ E.—4*th*, Wind southerly, weather cloudy. Lat. obs., 24° 38′ S., lon. 5° 50′ E.—5*th*, Wind southerly in squalls. Lat. obs., 22° 40′ S., lon. 4° 24′ E.—6th, Wind southerly in squalls. Lat. obs., 21° 5′ S., lon. 3° 0′ E.—7*th*, Moderate trade at S.S.E. Lat. obs., 19° 35′ S., lon. 1° 50′ E.—8*th*, Moderate trades, no obs. Lat. acct., 18° 8′ S., lon. 0° 48′ E.—9*th*, Trades shifting in the S.E. Lat. obs., 16° 38′ S., lon. 0° 10′ W.—10*th*, Moderate trades, weather very cloudy; got a glimpse of the ⊙ and ☽ 2° 49′ 45″ W., by watch, 2° 22′ W. Lat. obs., 15° 55′ S.—11*th*, Brisk trades; at 8^h a.m., lon. per watch, 4° 49′ W.; at 9^h a.m. saw the Rock of St. Helena, bearing W. by N. ½ N. dist. 10 leagues. Lat. 15° 56′, lon. 5° 9′ W.—12*th*, Moderate trades, middle and latter part squally. *At anchor under the lee of St. Helena.*

The LEDA, Capt. JAS. STEUART, 1817 and 1818.—The Leda took her departure from England in May, 1817. Crossed the Line, 1st September, in 19° W. North of the Line, on approaching it, the current had appeared to be south-westerly; but on the 9th of September, in 12° 42′ S. and 25° 58′ W., it had a tendency to the northward of West. On the 10th and 12th it was the same, and a strong southern swell had then been met for several days.

7th October, at daylight, the Table Land of Good Hope was seen. The longitude by last lunar proved to be quite correct: that by dead reckoning was 3° to the eastward, and supposed to be owing to westerly currents.—*8th October*, Anchored in Table Bay, within the Bank, and moored with a cable N.E. and S.W. Post-office bearing West.

October 12th to *18th*, In Table Bay. It is difficult to describe the violence of the gusts of wind which come off the land. Did it blow as hard from the sea, it would be impossible for ships to ride out its fury. The worst wind for shipping that can blow here is from N.N.E. to N.W. It is the custom in this bay, when ships have cargoes to deliver, to strike yards and topmasts, as shown in the directions hereafter.

27th October, Took an excursion up to the top of the Table Mountain, and was highly gratified by the beautiful prospects.

From the Cape of Good Hope the Leda proceeded to Ceylon, and, on her return to the Cape, Captain Steuart drew those appearances of the land, of which reductions are given on the Chart of the Ethiopic Ocean. At daylight on the 22nd of June, a remarkably fine morning, the Leda again weighed, and made sail for England. At noon, being to the eastward of Robben Island, it was calm: at about 1^h p.m. a breeze from the N.N.E. At 2^h just weathered Robben Island. Obliged to take in the small sails, and double reef the topsails. At 5^h p.m. the clouds rising very black to the northward, and blowing very hard. In fore-topsail, and close-reefed the main one. About 8^h p.m. the wind flew suddenly to N.W., and blew violently. Obliged to take in the foresail and mainstaysail. The sea running very high, shipped an immense quantity of water. Wind from W. by N., our situation at last became alarming, as it was doubtful whether we could clear the Cape of Good Hope, not being able to bear more sail; it blowing as violent as ever I witnessed it, and the sea as high.

23rd June, Weather moderated. At 7^h a.m. Cape Point S.E. by S. 4 leagues. At noon, E.S.E. about 4½ leagues.—*24th*, Broke the jib-boom, and cap, with violent pitching. Very hard gale, with sharp squalls of rain. *25th*, Gale still violent; from West, W.S.W., and S.W. Lat. 35° 57′, lon. 18° 11′. Afternoon, more moderate. *26th*, weather fine.

9th July, 1818, Fine breeze S.S.E., with pleasant weather. Lat. 23° 33′ S., lon. 5° 16′ E. Var., per ampl., 23° 30′ W.

15th, In making St. Helena, I prove the longitude by dead reckoning to be nearly 2° too far to the eastward, which I consider to be *principally owing to western currents.* Strong trades, with frequent squalls.

19th, Ascension in sight.—Middle of the island, N. by W., about 11 miles. In working the log, I find that I have been driven 25 miles to the westward of estimation in the *run from* St. Helena. At 2^h p.m. observed a ship at anchor, with colours flying, likewise *colours flying on shore.* Wind S.E. At 4^h p.m. H.M. ship Redpole's boat came on board, and shortly after the governor of the island. We were by this time, 4ʰ 30′, hove-to in the roads. It not being the turtle season, I obtained from the governor only six small ones, and one pumpkin, for which I gave some spirits, there being none on the island. At 5ʰ 30′ p.m. made sail from this miserable place, with a pleasant breeze.

22nd July, Lat. 2° 34′ S., lon. 17° 50′ W. Var., per ampl., 15° W. This evening observed the sea to be particularly luminous, and a great number of dolphins.—*23rd*, Wind S.E. Lat. 1° 14′ S., lon. 19° 8′. Var., 15° W. Strong southerly current, 2 knots. —*24th*, Lat. 0° 11′ N., lon., *d. r.*, 20° 43′. Lon. by ✱ ☾ & ⊙ reduced to noon, 21° 50′, which induces me to consider the current to set S.W.

25th, Lat. 1° 48′ N., lon. 22° 33′. Effect of southerly current not so strong.—*26th*, Lat. 40° 16′. Considerably to the northward of estimation by log, that is, 30′. Conceive the current to set N.W. Wind South.

27th, Lat. 7° 8′ N., lon. 23° 39′. Strong northerly current perceptible.—*28th*, Light winds, S. by W. and S.W. Lat. 9° 10′ N., lon. 22° 42′. Observations this day induce me to consider the late northern current must have had an eastern tendency. Var., 16° W. Wind W.S.W.

29th, Lat. 10° 44′, lon. 23° 17′. Current S.E., half a knot.—*30th*, Lat. 11° 17′, lon. 23° 20′. Felt the effect of the S.E. current.—*31st*, Lat. 12° 47′, lon. 24° 15′. Current easterly.

1st August, at noon, lat. 14° 19′ N., lon. 24° 43′ W., which gave 32 miles S. ¾ E., true bearing, from Brava Roads; which makes the longitude quite correct, and agrees with the following compass bearings taken at noon. West end of Brava, North; Peak of Fogo, N.E. ¾ N.; and St. Jago from N.E. by E. ½ E. to E. by N. ¼ N. Current setting to the northward; weather calm.

3rd August, lat. obs., 14° 33′, lon. 25° 14′. Wind N.N.E. Fine pleasant weather, every appearance of the N.E. trade wind.—*9th*, lat. 22° 43′, lon. 30° 14′. Longitude by several sets of distances reduced to noon, 32° 14′ W., induces me to conclude I must have had a strong western current.

11th August, lat. 26° 29′, lon. 33° 21′; passing seaweed in great quantities.—*13th*, lat. 38° 48′, lon. 34° 23′. Var., 15° W. Current setting N.W.—*21st*, lat. 38° 18′, lon. 28° 55′. By bearings of Fayal and Pico, near 100 miles to the westward of dead reckoning, in the run from the Cape Verde Islands. After leaving the Cape Verde Islands, the current set strong to the westward. In about 25° N., N.W.; 32° N., S.W.; and within the few last days its general tendency has been northerly and N.E. Var., 19° 20′ W.

23rd August, lat. 41° 12′ N. bearing 13′ to the North of latitude by *d. r.*, owing to the current. Var., 25° W.—*24th*, Lat. 42° 44′, lon. 28° 5′. Found the current to set N.W. —*26th*, Inclinable to calm. At 8ʰ a.m. observed something floating on the lee-bow, which was at first taken for a boat; but, on a nearer approach, found it to be the butend of a very large tree, covered with barnacles and shells, and surrounded with fish. I am clearly of opinion that, in a gale of wind, in twilight or moonlight, similar things have been mistaken for rocks! Lat. by *d. r.*, 45° 5′, lon. 28° 48′. Current N.N.W.

27th August, Lat. 45° 22′, lon. 37° 30′. Var. at sunrise, 25° W.—*29th*, Lat. 46° 22′, lon. 22° 6′. Var., 25° W. Current to S.E.

1st September, Lat. 48° 11′. Ship 14′ to the southward of estimation, apparently owing to a S.E. current. Lon., *d. r.*, 11°, corrected, 12° 12′.—*10th*, At noon, anchored off Purfleet. The tide-surveyor then came on board, and *seized all the little nick-nacks I had as presents*. Such meanness is unpardonable. But I cannot conceive it was ever the intention of the legislature that an individual should be robbed when no injury was intended to be done to the revenue.

30th. The cargo being discharged in good condition, paid off the worthy crew, and parted with regret. (Signed) JAS. STEUART.

CAPE OF GOOD HOPE TO NORTH AMERICA.

The intelligent *Amasa Delano*, in the Narrative of his Voyages and Travels, 1817, has given the following remarks on leaving the Cape of Good Hope, and proceeding thence to Boston.

If wishing to stop at the Cape of Good Hope, a ship can enter False Bay with safety, and anchor in Simon's Bay in the winter season.

In leaving the Bay to proceed to the westward, it will be natural to chose a fair wind to make some westing with, and a ship, in the season of the year likely to have bad weather, should not advance to the northward of the latitude of the Cape till 1° or more to the westward of it, on account of the strong gales of wind that sometimes blow from the westerly quarter, and would, in such cases, drive a ship on shore to the northward of the Cape. This has been done, and ships have been lost from no other circumstance than standing to the northward before securing sufficient westing to bear the effects of a gale of wind on a lee shore. After the passage round is secured, the best course to run is for St. Helena, and from that to the Island Ascension, if after the month of September till the month of March; from thence steer a course so as to cross the Equator in the longitude of about 30° W., and pass to the westward of the St. Pedro Rocks; then make the course so as to pass but a safe distance to windward of the Island of Barbadoes.*

But should it be required to make a passage from the Cape of Good Hope between the months of March and September, it is recommended to steer down the S.E. trade winds, somewhere about lat. 20° S. till nearly in lon. 25° W., before hauling to the northward, as the winds and currents at that season of the year are from the southward on the American coast, setting strong, to the northward a great part of the time, and will, of course, accelerate the passage. To cross the Equator at that season of the year in as high a longitude as 35° W. would be safe; and, perhaps, better than to cross it farther to the eastward. I have found it best, when bound to any port in New England, to sail to the eastward of Bermuda, as the winds at that season of the year are as frequently from the eastward as from any quarter of the compass.

When I have passed to the westward of Bermuda it has been repeatedly the case that I have been kept for several days together hemmed in to the westward of Nantucket Shoals with a N.E. wind, and at the same time I might have gone to the eastward of the Isles and avoided this delay, so extremely disagreeable for seamen when returning from a long voyage, from being kept out of port, and fatigued with bad weather and contrary winds. It is a good general rule to come on to the coast of America, when bound to a port to the eastward of New York, to pass to the eastward of the Bermudas at any time between the 20th of March and the 1st of October.

SECTION IV.

DESCRIPTION OF THE ISLANDS AND SHOALS OF THE OCEAN, WITH DIRECTIONS FOR SAILING, ETC.

[This Section includes, in particular, FERNANDO NORONHA, TRINIDAD, ASCENSION, ST. HELENA, TRISTAN DA CUNHA, GOUGH'S ISLAND, FALKLAND ISLANDS, SOUTH GEORGIA, SANDWICH LAND, SOUTH SHETLAND, ETC.]

I.—SHOALS IN THE VICINITY OF THE EQUATOR.

HAVING given, in our Book of the ATLANTIC OCEAN, a particular detail of all the known dangers to the northward of the Line, it is not requisite to give a repetition of such as are there described.

VOLCANIC REGION.—In the neighbourhood of the Equator, between lon. 18° and 21° W., there appears to be a tract which has been very fertile in the production of vigias, and although the recent American Exploring Expedition under Captain Charles Wilkes has disproved the existence of any dangers in that vicinity that have been described, still the concurring testimony of so many navigators, as to dangers being seen, and even soundings obtained, that we must be compelled to believe that they are not without some foundation.

---

* *Not omitting to* allow for the operation of the Equatorial Current.—ED.

By comparing the following statements, it will be seen that they all refer to a comparatively limited space; and if, as is not improbable, that the earlier statements are to the *eastward* of the true positions, it will reduce the extent in which they have been met with to still narrower limits. The volcanic agency which appears to be so active in this spot in the middle of the ocean has very likely caused the elevation of shoals, which have subsided, and left no trace of their existence.

It is known that when earthquakes are felt at sea, they produce upon vessels an exactly similar effect to striking on a rock or running aground. Thus, in that which took place on the Coast of Chilé, in 1835, and which extended over a space of more than 15° North and South, and 10° East and West, the vessels under sail or at anchor felt the shocks as if they rubbed against rocks;[*] and that which took place at Odessa on the 9th February, 1838, presented precisely the same circumstances.[†]

It would be interesting to learn what is the depth of the ocean at this part, for although it would be a great chance that, in trying for soundings, any of the submarine heads or peaks, which we may infer do exist, would be touched upon, still the enormous upheaving force that would be necessary to raise a mountain from a great depth would lead us to suppose that the general depth is not more than might be attained. Although in the experiments of Sir Edw. Belcher, before stated (p. 48), he was unsuccessful in finding the bottom with the enormous length of 3,065 fathoms of line, at 450 miles eastward, in lon. 10° 37′ W., lat. 0° 24′ N., yet at a greater distance from the African coast, in lat. 4° 14½′ S., lon. 9° 37½′ W., he struck the bottom in 1,615 fathoms; this is about 550 miles E.S.E. from the region under consideration.

We subjoin the various notices that we have been able to collect on this subject, which will prove interesting to the navigator, as it refers to that part of the Equator which is generally traversed; and although no danger is to be apprehended from those that have been seen, still it will be of service in throwing a light on any unusual occurrence that may be met with in this vicinity.

First, then, on the authority of M. D'Après:—

"On the 5th of February, 1754, the people on board the ship *Le Silhouette*, commanded by *M. Pintault*, felt a shock, or violent agitation, as if the vessel had touched upon a shoal: it was then about 5^{h} p.m., and from the latitude taken by that very day's observation, this dangerous spot should be 20′ to the southward of the Line, in about 20° 50′ West longitude, according to their reckoning, which they traced upon the French chart, from the road of Praya, in the Isle of St. Iago.

"On the 13th of April, 1758, the frigate *La Fidèle*, *M. Le Houx*, commander, felt also the like shocks in 20′ South latitude, and 18° 0′ West longitude.

"On the 3rd of May, 1761, *Le Vaillant*, Captain *Bouvet*, about 1^{h} p.m. saw a *small sandy island*, which bore N. by E. The latitude by the reckoning at noon was about 23′ South, and their longitude, reckoned from the sight of Ferro Island, which they made on the 8th of April, was about 19° 10′ West.

"On the 17th of October, 1747, the ship *Le Prince*, Captain *Bobriant*, in its passage to India, felt one or two shocks, as if it had struck upon a shelf. She was at that time in lat. 1° 35′ South, and about 17° 15′ West longitude, reckoned from the sight they had of the Isle of Brava."

Some breakers were seen, in 1730, in lat. 2° N., and lon. 22° 18′, according to *M. Rochette*. They were known as *Cæsar Breakers*.

A shoal, 3 leagues in circumference, and even with the water's edge, is stated to have been seen by several French East India ships, and placed by the French hydrographers in lat. 4° 15′ N., lon. 19° 20′. The Spanish chart stated it to have been seen in 1796, and an English chart exhibited it in lat. 4° 5′ N. and lon. 20° 35′.

October 3rd, 1771, *Le Pacifique* frigate, Captain *Bonfils*, in a voyage from the Cote d'Or to St. Domingo, felt at 8^{h} *p.m.* a shock or extraordinary trembling, similar to that which is felt on a vessel's grounding, or rather like that of a launch. They put back immediately, and sounded, but without finding bottom. They were in lat. 0° 42′ S., lon., by reckoning, 22° 47′ W. The sea was greatly agitated.—*M. Daussy.*

---

[*] Journal of the Royal Geographical Society, vol. VI., p. 329.

[†] Journal des Debats February 27th, 1838.

Another danger is indicated as follows, by the voyage of Commodore (now Admiral) *Krusenstern* :—

On the 19th of May, 1806, at 5^h in the evening, "we saw, in lat. 2° 43′ S., lon. 20° 35′ W., in the direction of N.N.W., and at the distance of about 12 or 15 miles, a singular phenomenon; but which, owing to the lateness of the day, we were unable to examine sufficiently close to ascertain the nature of it. A cloud of smoke arose to about the height of a ship's mast; disappeared suddenly; then arose again, and vanished entirely. It could not be a waterspout, nor a ship on fire, as some persons on board conceived, for the smoke rose much too high; and Dr. Horner was of opinion that, if the whole was not an ocular deception, occasioned by a peculiar refraction of the rays of light, it had all the appearance of a volcanic eruption, and was, possibly, the forerunner of an island."

We have not the least doubt of its being a volcanic eruption. Its true longitude is probably 20° 44′ W.

In lat. 5° 4′ 23″ N., lon. 21° 25′ 40″ W., the *Warley,* E.I.S., passed a shoal on May 7th, 1813. They had no time to sound, but supposed that there were about *seven fathoms on it: the bottom was distinctly seen,* and consisted of ridges of rocks with sand between them. It was of small extent, not exceeding a quarter of a cable in length.

Although not in this precise neighbourhood, the following, perhaps, is in connexion with it:—on the 1st of May, 1824, indications of a volcanic eruption were seen in about 7° N. and 21° 50′ W. These were a hissing and bubbling up of the waves, resembling the ebullition of boiling water, and whitened with foam.—(*Lieutenant Evans.*)

Captain Proudfoot, in the ship *Triton,* from Calcutta to Gibraltar, passed over a shoal on the 18th of December, 1816, in lat. 0° 32′ S., lon. 17° 37′ W., by mean of two chronometers, adjusted at St. Helena to Captain Horsburgh's longitude. [This, corrected, will be about 17° 46′.] It appeared to extend in an East and West direction, 3 miles; and in a North and South direction, 1 mile. *Sounded in 23 fathoms, brown sand:* saw no appearance of breakers.

According to a report made by Mr. Fraser, of the ship *St. George,* that a *reef, with high breakers,* had been seen in the night of the 14th of October, 1830, in lat. 6° 35′ S., lon. 12° 57′ W., a diligent search for it was made by H.M.S. *Dryad,* accompanied by her tender, on the 14th of January, 1832. On the following day the Dryad was upon the exact spot, the tender bearing N.W. 4 or 5 miles, the day very fine and clear, a five or six knot breeze by the wind, and sufficient swell to break upon a shoal; nothing, however, indicating the existence of such a shoal could be found. For particulars, see the *Nautical Magazine,* December, 1832, p. 561.

On the 12th of April, 1831, the *Aquila,* of Scarboro', *Captain John Taylor,* was in lat. 0° 22′ 15″ S., lon. 21° 6′ 30″ W., light winds and fine pleasant weather. At 40′ p.m., the water being very smooth, and the ship going at the rate of five knots, a loud rumbling noise was heard under her bottom, and a sensation felt, exactly like that of a vessel sliding over a rock: the rudder was so much agitated that the man who was steering could scarcely hold the wheel. No difference could be observed in the colour of the water, nor the smallest rippling. The captain concluded, at first, that it must have been a rock; but after arriving in London, there was not, on examination, the least sign of any rub on the copper; and it was concluded that there must have been, in the spot above mentioned, a volcanic eruption, the shock of which did not exceed 15″. The situation of the Aquila was very near that of the Silhouette, in 1754.

November, 1832. The ship *La Seine, Captain Le Marié,* beng in lat. 0° 22′ S., lon. 21° 15′ W., and going from 4 to 5 knots, felt at 11^h *p.m.* a shock so violent that he thought they had struck on a bank.—*M. Daussy.*

On the 9th of February, 1835, the bark *Crown,* of Liverpool, after crossing the Equator with a pleasant breeze at E.S.E. and running at the rate of 6½ knots, at 10^h 30′ p.m. touched the ground and grated for a short time with the keel, as if passing over a coral reef; so soon as clear, the boat was lowered down, but no bottom was found at 120 fathoms deep. The latitude of the spot was 57′ South, and the mean longitude, by chronometers and lunars, 23° 19′ W. For further particulars, see the *Nautical Magazine, October, 1835, p. 577.*

From the journal of *Captain Jayer*, commander of the *Philantrope*, of Bordeaux.—"On the 28th of January, 1836, at 9^h in the evening, being in about 0° 40′ S. lat., and 20° 10′ W. lon., we felt an earthquake, which made the vessel shake during three minutes, as if she were scraping along a bank, and to such a degree that I was certain she was aground." And again he says, "From the 13th to the 16th of March, fine weather, we were in sight of an American vessel, the St. Paul, of Salem, going to Manilla. This vessel, which we had seen under the Line, had felt the same earthquake which we had experienced, and at the same time, being 10 miles West of us." *—*M. Daussy.*

In the number for November, 1836, of the Transactions of the Asiatic Society of Bengal, is the following extract from the proceedings of the society of Calcutta.—" Mr. T. L. Huntley presents some volcanic ashes, collected at sea, by Captain Ferguson, of the ship *Henry Tanner*. These ashes were black, and had the same consistence as those of coal. The spot where they were picked up was 0° 35′ S., and 15° 50′ W.; the sea being in a violent agitation." In a former voyage made by the same officer, and almost in the same place, lat. 1° 35′ S., lon. 20° 27′ W., we had been greatly alarmed by hearing a very great noise. The captain and officers thought that the ship had struck on a coral rock; but in sounding they could not reach the bottom.

Captain Sprowle, of the *Circassian*, is stated to have seen a sand bank under water, but just visible in the hollow of the sea, in lat. 1° S., lon. 19° W., which makes it in the direct track of vessels homeward bound from St. Helena, &c. Horsburgh makes no mention in his directory of any bank having been seen here, and it is more than probable that vessels have sailed immediately over it. No coloured water has, that we are aware of, ever been seen here; and if it were not for the difference of 2° of longitude between this supposed bank and that of Vigia, it might be concluded that it must have been the latter. As there can, however, be but little doubt, if the latitude and longitude be given correct, that such a bank does exist, it is highly important that the government should take some steps in this important matter, and that captains of vessels bound for the East Indies should endeavour to corroborate it for the safety of all mariners.—*Times*, January 14th, 1841.

The following, perhaps overdrawn statement, appeared in the newspapers of February, 1853. "An extraordinary marine convulsion was experienced by the *Maries*, on her passage to Caldera. On the morning of the 13th of October, the ship being 12 miles from the Equator, in lon. 19° W., a rumbling noise appeared to issue from the ocean, which gradually increased in sound till the uproar became deafening; the sea rose in mountainous waves; the wind blowing from all quarters, the control over the ship was lost, and she pitched and rose frightfully, all on board expecting each moment to be their last. This continued 15′; the water then gradually subsided, when several vessels in sight at the commencement of the convulsion were found to have disappeared. Shortly after a quantity of wreck, a part of a screw steamer, was passed, so that some vessels and lives were lost."

Another occurrence is as follows:—Ship *Ann Mary*, of Liverpool, *Mr. Rackham* commander, on a voyage from Liverpool towards Bombay, commencing 1st January, 1842. "Made Ferro January 19th; 22nd, passed the position assigned to *Maria's Shoal*; water a little discoloured. Passed to the eastward of Cape Verde Islands; strong and steady trades. February 5th, light breezes, smooth water, fine weather; at 5^h a.m. was aroused from sleep by a violent shaking of the vessel, and a loud rumbling noise. My first idea was that the vessel was on one of the dangers hereabouts, the next that we had been struck by lightning, and that the masts were all tumbling down; by this I was on deck, looked over the side, the vessel going through the water, but shaking as if she would fall to pieces, so that the man at the helm could not hold it. All hands were now on deck, and panicstruck at this most awful earthquake; it lasted nearly a minute; 5^h 50′ a slighter shock; 9^h 45′ a fainter; and near noon, one scarcely perceptible. At noon observed in lat. 0° 44′ S., and chronometer brought down 20° 16′ W., from 5^h a.m. made a S.W. course 26 miles. It is probable that this submarine ebullition may have left some danger.†

Another notice of these eruptions is as follows:—

Ship *Sarah Bell*, *J. R. Bell*, commander, from Port Philip to Liverpool.—In lat. 1° 7′ S., lon. 21° 21′ W., on the 3rd of July, 1842, at 4h a.m., we experienced a very heavy shock of an earthquake, which at first alarmed us very much, as we thought the ship was grinding over a bank or shoal; but the continuous steady noise and agitation of the vessel soon convinced us of the cause; as had it been a shoal, from the sea there was running at the time, the vessel must have been wrecked; as it was, she never lost any way, but continued going at the same rate as before. The noise and sensation (as if a heavy chain cable were running out) continued about four minutes.—*Nautical Magazine*, 1842, p. 646.

---

* Comptes Rendus, Acad. des Sciences de Paris, April, 1838.

† It would appear that this was but the commencement of a series of subterranean commotions, which terminated in the destruction of Hayti.—*Ed. Naut. Mag.*

On the 17th July (1852?) Captain J. H. C. Short, when in command of a large ship bound to the East Indies, met with a very singular phenomenon, which will extend the area of this submarine fire action.

"Being in lat. 3° 30′ S., lon. 24° 30′ W., sudden trembling of the ship was felt. I was on the lower deck at the time. The mate, who was on deck, called loudly to me, saying, the ship is striking on rocks, for such it appeared to be. I immediately ran on deck and ordered the helm down. Although there was a nice light breeze, the ship would not answer her helm. I looked over the side, the water around us appeared to be agitated, as if boiling, and a short distance from us was a vapour ascending as if from a furnace. All hands witnessed this extraordinary sight. We got the long leadline along, and payed to 110 fathoms, but no bottom was found. The lead and line were very warm when hauled in."—*Nautical Magazine*, 1853, p. 381.

It being desirable that the reports respecting the existence of some of the foregoing islands should be set at rest, the American Expedition, under Captain *Charles Wilkes*, explored this region, and from his letter we give the following extracts. The reader will find it in the Atlantic Memoir, 10th edition, p. 520.

"We succeeded in crossing the Equator in lon. 17° W., on the 5th of November, 1838, and then stood for the *Triton's Bank*, said to be in lat. 0′ 32′ S., lon. 17° 46′ W. When within a short distance of its position, the squadron hove-to for the purpose of ascertaining our position accurately; after which a course was steered nearly West. Being at the time well to the eastward, we ran on a line due East and West over it; the vessels of the squadron being spread about 3 miles apart, on a line North and South. We did not, however, find it in our progress, or any bottom, or indication of soundings; no *discolouration* of water was visible, or change of temperature, although the line extended 30 miles East and West of its reported position; after which we stood again to the North, and ran over a *vigia*, as laid down on the charts, but none such was found in existence.

"Our next examination was for *Bouvet's Sandy Island*, which was, in like manner, carefully searched after, in and around its position, as laid down on the charts; but our search was equally unsuccessful.

"Finally, search was made in and about lat. 2° 43′ S., lon. 20° 35′ W. Extending to the N.N.W. of this point a distance of 30 miles hereabout, having been assigned as the situation of the submarine volcano reported by Admiral Krusenstern, which was supposed might have left a shoal. This locality was twice run over in different directions and carefully examined, with the squadron in open order, but none such was found in existence.

"Lieutenant Hudson, of the *Peacock*, having separated from me on the 16th of October, proceeded on a different course, in search of the same shoals which we were looking for; but was equally unsuccessful in finding any, as appears from the following extract from his report to me, which affords further evidence, if it were needed, of their non-existence.

"After disproving the existence of *Warley's Shoal* and *French Shoal*, he proceeds to say, 'I then made the best of my way for the *Triton Bank*, with the wind hauling and veering from S.S.W. to S.S.E., and passed the Equator on the night of the 3rd of November, in lon. 17° 40′ W., and continued over and around the locality of that bank until the morning of the 5th; getting casts of the lead, during the time, in from 50 to 250 fathoms, up and down, without finding bottom. I have in my search fully satisfied myself, and hope our examination will prove equally so to you and all others, that these shoals do not exist.' "

By order of the British Admiralty, Captain *Wickham*, in the *Beagle*, also tried for soundings, on crossing the Equator, but did not succeed, with 190 fathoms, in two places;

one in 0° 55′ S. and in 22° 52′ W., and the other in the same latitude, in 23° 23′ W., the vessel's course being due West between them.*

Although the fact of the present existence of the shoals, &c., before mentioned, may be disproved by the result of the American expedition, still the undeviating testimony of so many navigators to this one particular space, as being subject to volcanic eruptions, will certainly give very great weight to the testimony of their having been seen: and, at the same time, renders it very probable that similar discoveries may occur again.

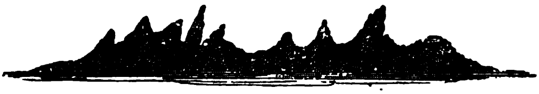
We cannot conclude our notices on this subject without again recommending this singular region to the observation and attention of the navigator.

2.—PEÑEDO DE SAN PEDRO, OR ST PAUL'S ISLETS.

This cluster of five or six craggy steep rocky islets without verdure, whitened with birds' dung, are about a half a mile in circumference, and the highest pinnacle 70 feet above the sea, lie in lat. 0° 55′ 45″ N., lon. 29° 21′ W., a position well ascertained, as it is the mean between those observed by Captain FitzRoy in 1832, and Sir Jas. Ross in 1839, and therefore well adapted as a point to correct longitudes or rate chronometers.

The appearance annexed has been communicated by the master of a merchant ship.

The rocks change materially in appearance, according to their bearing. The *Tellicherry* passed in sight in 1802, and found that their appearance between N. 30° W. and N. 37° W., 6 or 7 miles distant, was that of a heap of rugged rocks, with low gaps between some of them. The northernmost, a small pyramidal rock rather lower than the rest.



Peñedo de St. Pedro, West, 6 miles, as taken by Captain Monteath.

Commodore Brou, in the French frigate *Hermione*, in 1825, describes Peñedo de San Pedro as a mile in extent, in a N.E. and S.W. direction; seen in fine weather 4 to 5 leagues off; when bearing N.W. appearing in the form of three pinnacles of sharp naked rocks of a remarkable shape. The S.W. pinnacle separated a short distance from the others. The latter appears safe to approach, and no breakers were seen to indicate sunken rocks. The Hermione sailed round on the eastern side, at the distance of 5 miles; did not try for soundings; but from the colour of the water it was presumed that bottom would not be found.

The Equatorial Current set the ship to the westward at the mean rate of 18 miles, and to the North 6 miles in the 24 hours, between the parallel of 8° North and the Equator, and the meridians of 28° and 30° W. At the islets the direction of the current changed and set more to the northward at three-quarters of a mile in the hour.

The most copious description of these isles is that of Captain Amasa Delano, who, in the American ship *Perseverance*, from Boston toward Cape Horn, 23rd December, 1799, at 2^h p.m., saw three small islands bearing W. by S. 2 or 3 leagues distant. The vessel bore away, and at 3^h p.m. was abreast of them. Hoisted the small boat out, went on shore, and found them to be nothing more than a cluster of craggy rocks, about one-fourth of a mile in extent from North to South, and nearly as much from East to West. No sort of vegetation existed upon them. The rocks were found to be five in number, but only two of any considerable magnitude. Their greatest extent was from N.N.E. to

---

* These unsuccessful soundings will prove but little, as they were to the westward of the tract in question.—ED.

For further observations, the reader is referred to the before quoted paper by M. Daussy, in the Comptes Rendus, &c., April, 1838.

S.S.W. The two largest nearly connect with each other and form a kind of harbour, or place of shelter for a boat, on the N.W. side. Here they managed to land, but obtained nothing excepting a number of boobies. On shore the aspect was most dreary; the sea roaring and surging on all sides. Two smaller rocks were lying off to the S.S.W. of the large ones, and one, very small, to the N.E. When on the highest part, which was 100 (70) feet above the surface of the sea, no dangers could be seen but what showed themselves above water; nor could any be discovered from the ship. Plenty of fish were caught in the harbour or basin. At 6^h p.m. returned on board. Sharks were numerous about the ship; but, in attempting to take them, a number of hooks and lines were lost, and several pair of grains broken. On sounding, within 2 miles of the islets, no ground could be found with a line of 200 fathoms.

Capt. Delano states that the islets may be seen at the distance of 4 leagues, and always make like three sail when first seen. They are very dangerous if fallen in with by night. The current near them sets N.W. by N. true, 1 mile an hour. The parts above the reach of the surf are covered with birds' dung. The birds were hatching their young at the time. The month of November would be the season for procuring eggs at this place, as they may be obtained at that time in abundance; but, being the eggs of oceanic birds, they are rather fishy than sweet.

Capt. FitzRoy, from his observations, places the summit of the Peñedo in lat. 0° 55′30″, lon. 29° 22′. The variation here, on the 16th of February, 1832, was 9½° West. Temperature of the air and water 82°. Wind S.E. The rocks were seen on the horizon at sunset of the 15th. They appeared extremely small at about 8 miles distant. At daylight next morning two boats were sent to land upon and examine them, while the *Beagle* sailed round, sounding and taking angles. Good observations were made during the day, as the sky was clear and the water smooth.

The multitude of birds which covered the rocks was astonishing, and they suffered themselves to be kicked about and killed with sticks; at the same time, those on the wing even darkened the sky. While one party were scrambling over the rock, a determined struggle was going on in the water, between the boats' crews and the sharks. Numbers of fine fish, like the groupars (or garoupas) of the Bermuda Islands, bit eagerly at baited hooks put overboard by the men; but, so soon as a fish was caught, a rush of voracious sharks was made at him, and notwithstanding blows of oars and boat-hooks, the ravenous monsters could not be deterred from seizing and taking away more than half the fish that were hooked.

At short intervals the men beat the water with their oars, all round the boats, in order to drive away the sharks; and for a few minutes afterwards the groupars swarmed about the baited hooks, and were caught as fast as the lines could be hauled up,—then another rush of sharks drove them away; those just caught were snatched off the hooks; and again the men were obliged to beat the water. When the boats returned, they were deeply laden with birds and fish; both welcome to those who had been living on salted provisions.

From the highest point of the rocks, which is 64 feet above the sea, no discoloured water, nor any breaking of the sea, could be discerned, apart from the place itself; and from the soundings taken in boats, as well as on board ship, I conclude that it is unconnected with any shoal, being merely the summit of a steep-sided mountain rising from the bottom of the ocean. A slight current was setting to the westward, not amounting to a mile an hour.—(Vol. II. p. 56.)

Lastly they were visited by Sir James Ross, with the *Erebus* and *Terror*, in his Antarctic expedition, November 28th, 1839. He has given a small chart of them, and the following:—"We found the steep north-eastern side of the cove the most practicable point for landing, and near it we obtained our observations. These remarkable rocks, which lie in lat. 0° 56′ N., lon. 29° 20′ W., and more than 500 miles distant from any continent, appear to have been raised by volcanic agency, and not in any part exceeding 70 feet above its surface, and present the form of an oblong crater, the larger axis lying in a N.E. and S.W. direction." Mr. M'Cormack, the talented surgeon and naturalist to the expedition, gives also the following remarks:—"They consist of a group of rocks scarcely exceeding half a mile in circumference. The four largest form a kind of bay on the N.W. side, in which there is considerable swell. The highest rock is on the N.E. side of the bay, rather sharply peaked, 70 feet above the sea. The next in height, and the most remarkable, from its uniform white colour, is 61 feet, and is on the

S.W. or opposite side. This rock is a very hard kind of hornstone, covered with a thin layer of calcareous matter, evidently formed by the excrement of the birds."* Variation, November 28, 1839, 13° 20′ W.; dip, 27° 8′ N.

3.—SANDRE ROCK?

A danger, which certainly must be placed among the doubtful, has been announced to the South of the Peñedo. It is necessary to give it, though the statement does not carry much conviction with it. "On December 30th, 1849, at 7^h p.m., the ship *François Casimir*, Captain Sandré, being in lat. 0° 14′ South, lon. 29° 18′ West, perceived, at a cable's length off, on the port hand, a large black mass. The moon had not risen, and it was not certain whether this mass was a rock or a ship, but the commander doubted that it was a vessel, because up to sunset he had a man at the look-out, who saw no signs of such on the horizon. On the morrow they made the Peñedo, and found that the current had set them to the North.†

4.—FERNANDO NORONHA AND THE ROCCAS.

FERNANDO [FERNÃO] **NORONHA.**—The position of Fernando Noronha was formerly given as 3° 56′ 20″ S., and 32° 38′ W. from Mr. Wales's chronometric observations, 9th June, 1775. Captain Cook reckoned it as 3° 53′ S. and 32° 24′ W. Captain Hewett, in 1817, gave it as 3° 54′ S. and 32° 31′ W.; but from Captain Foster's observations, revised by Dr. Tiarks, the peak or pyramid is given as in 3° 50′ 10″ S. and 32° 23′ 15″.

This island is remarkable by a high rocky peak on its North side, called the *Pyramid*, very barren and rugged; and by its S.W. point, named the *Hole in the Wall*, which is pierced through, and gives a free passage to the sea. The Pyramid appears, at a distance, like a very high steeple or tower. The South side is distinguishable by a little rocky isle, that appears like a statue. The island is about 7 miles long, and 2 or 2½ broad. It has been the rendezvous of vessels employed in the southern whale fishery, &c., for procuring supplies of cattle, sheep, poultry, wood, &c.; but water is frequently scarce. East India ships have, also, occasionally touched here, when they have been horsed to the westward by the currents.‡

On approaching the island no soundings will be found until very close in. There is no danger but what may be seen, excepting a rocky spot off the South side, between 2 and 3 miles from shore, and a rock at about a quarter of a mile from the S.W. point.

The road or principal anchorage is on the North side of the island, being sheltered by the north-eastern land, and several islets in that direction. The anchorage has from 10 to 12 fathoms, loose sandy ground, at about half a mile from the citadel point, or nearest shore. It is unsafe to lie in with northerly or N.W. winds, which are said to prevail from December to April; in the other months the winds are mostly from the S.E. or easterly, sometimes at N.E.

Water may be obtained here; but, in the dry season, it is sometimes very scarce. In seasons of drought, which are not uncommon, the rivulets are dried up, and the vegetation parched. There are but few vegetables, but plenty of live-stock and fish, with an immense quantity of doves. The fresh water is obtained from a well near the governor's house, in the cove called WATER BAY; but the cask must be rolled over some rocks, and swung off to the boat, over the impeding surf.

Wood is cut on the larger islet to the N.E., called WOODING OR RAT ISLAND. This islet is nearly surrounded by rocks, and there is a risk of staving the boat when taking off the wood, as it is heavy, and sinks if thrown into the water. Should the governor permit wood to be cut on the main island, it may be conveyed without much danger from the fine sandy bays to the westward of the road.

On the 9th of April, 1827, H.M. ship *Cambridge*, Captain T. J. Mailing, touched here, and there were, at the time, about 200 inhabitants upon the island: of these 60 were soldiers, under the government of a Prussian officer, who, with the assistance of an engineer, was repairing the fortifications and erecting new points of defence.

---

* Voyage to the Southern and Antarctic regions by Sir J. C. Ross, R.N., Vol. I. pp. 14—16.

† Annales Hydrographiques, Tome III. p. 343.

‡ A Survey of the Island on a large scale, with appearances of the land, &c., is published by Mr. Laurie.

From Tobacco Point, or the South point of the island, a reef of rocks, even with the water, extends half a mile to the southward; and to the S.E. by E., 2¼ miles from the same point, is the centre of a rocky patch, on which the sea always breaks. When in a line with these rocks, the Pyramid is shut in with the highest hill on the South side of the island. Between this reef and the shore is a channel of from 10 to 15 fathoms.

The current here commonly sets strongly to the westward, for which due allowance must be made in rounding the islands on the N.E.

On the 6th of June, 1830, Captain Foster, in H.M. ship *Chanticleer*, bade adieu to Ascension, and in six days came to an anchor off the village in the *Peak Bay* of Fernando Noronha.

Fernando Noronha has been copiously and finely described by Mr. Webster. The large island, he says, is still used by the Brasilians as a place of transportation for criminals, as well as for the exile of political delinquents. The beautiful scenery of this island is enchanting. The shore is scooped out by inlets, and embossed with green promontories, which are connected by circling beaches, where rippling waves chase each other over the silvery sands, and bathe the flowerets of the skirting woods. A fresh luxuriant verdure crowns the summits of the hills, blending its soft hue with the general contour of the island. A richness and variety of vegetation is seen everywhere, excepting on the colossal pyramid of naked rock, which, rising from the bosom of a grove, stands erect in barren ruggedness, towering majestically over the smiling and fruitful scenes around. It is a gigantic block, the summit being 800 feet above the level of the sea, and is an excellent mark for seamen.

The scenery throughout is all fertility and beauty. There are no romantic hills and dales, but everything is on a moderate scale, and pleasing to the eye. The vegetation is that of a thickly wooded grove, rather than that of the dense forest, for it admits of a walk even through its most shaded parts. There is an inland lake in the island, and one or two trifling brooks, but no permanent streams of any importance. In the wet seasons the island is one continued swamp and bog; while in the summer it is dry and arid, and occasionally altogether deficient of water.

Few of the trees are of sufficient magnitude to afford timber for many useful purposes, rarely exceeding 6 or 7 inches in diameter, and the largest a foot. The most common is the dark and laurelled *Bura*, which abounds with an acrid, caustic, milky juice, very much dreaded by the woodcutters, as it produces inflammation of the skin, and severe opthalmia. This tree is, therefore, regarded as a nuisance, inasmuch as it acts as a powerful depilatory; it removes the hair from the horses and cows, and gives them a diseased appearance.

The soil is a fine rich loam, of a considerable depth, and has a reddish tinge. There is upland pasture for sheep, and rich plains for cultivation, besides little fairy vales, blooming in all the beauty of verdure. The sandy beaches in the bays are sweetly picturesque, especially in the evening; the sand is as smooth as a well-rolled path, and the gentle ripple of the waves scarcely disturbs the tranquillity which reigns around.

The island is garrisoned by a small party of Brasilian soldiers, under the command of a major, who fills the office of governor. He has a few staff officers, and about 100 men. The islands are protected by several forts, which, if in good condition and well manned, would present a formidable means of defence.

A small village is seated on the shore of Peak Bay, built in the form of a square. The houses composing it are not worthy of note, but are sufficient for the place. A neat chapel stands on the hill over the village, which also boasts of a clean and comfortable hospital, and a respectable and commodious house for the governor. The other principal buildings consist of a set of barracks for the soldiers, a tank or large cistern for water, a bath, and a prison in which the culprits are safely lodged every night, after being allowed the liberty of ranging about the island by day. Most of the houses have gardens attached to them, and the governor has a farm at a short distance from the village, from whence his table is supplied.

At about a league from the village, in a S.E. direction toward Tobacco Bay, are extensive fields of Indian corn and cotton, besides a plantation of cocoa-nuts and a tolerable garden. A brick and tile manufactory is also carried on there, but there are no lime-kilns.

The employment of the people consists principally in fishing, for which purpose they have a manufactory of cotton line. Agriculture is much neglected, the greater part of the island being in a state of nature; but such is the richness of the soil that it would repay them well for any trouble they would bestow on it.

The process of drawing the seine is very interesting. This consists of a few long stems of a creeping convolvulus with the leaves on it, which are twisted together into a kind of mass or lump. Thus prepared, it is dragged into the water just within the break of the surf; and when a fish is seen within the scope of their leafy net, they drag it quickly ashore, with the view of entangling it among the leaves. This device is sometimes very successful. The cotton hand-nets that they also use are very neatly constructed, and with these they reap a much richer harvest. Whilst the operation of drawing the seine is going forward on the beach, some are occupied in angling from the rocks of the projecting points, and among them sufficient fish is caught for the provision of the whole islanders. Groups of naked fellows may be seen seated on the beach watching the operations of the fishermen; while the pelican is diving continually over the edge of the surf, and the man-of-war bird over him, who, as the pelican rises with his prey, darts down on him with incredible rapidity, and makes him instantly disgorge it, when it is instantly seized by this second plunderer.

The attempts of these islanders at navigation are confined to the Catamaran, not a single boat being found throughout the whole island. All ideas of improvement on anything are foreign to their minds; the accoutrements of their horses are the same as those used more than a century back; and as for agriculture, they have no idea of it. The ground lies untilled before them, the earth smiles in vain, while they are ever lolling in their hammocks, smoking and gaming throughout the day, the very patterns of indolence and laziness. The evenings are passed in serenading to the notes of a guitar, or singing and revelling at some lascivious fandango. The only art for which Fernando is famous is that of rearing capons, which are of the finest description.

The island is supplied with flour and other provisions from Brasil; but the supplies are, at times, deficient. When the *Chanticleer* was here, in 1830, the governor was very glad to exchange his fresh beef for flour and biscuits. The cattle of the island are very fine, and an abundant supply of good young beef was obtained. The governor was exceedingly attentive, and sent off every morning sufficient milk for the men as well as officers. Vegetables were rather scarce, although they might be raised in any quantity. Rat Island yields a profusion of fine melons. The water melons are particularly so, and sometimes 2 feet long.

During the stay of the Chanticleer, from the 12th of June to the 18th of July, the officers were kindly accommodated and most hospitably entertained by the governor and several families on the island.*

Captain FitzRoy visited this island in 1832: he says,—"Before sunset, on the 19th February, we saw the island of Fernando Noronha, with its singular peak towering aloft, and at midnight anchored in the roadstead.

"Next morning I landed, with difficulty, for observations, the surf being so high that any common boat would have been swamped. By taking great care, our broad and well built whale-boats landed the instruments and a small party, and re-embarked them afterwards, without accident.

"We landed in a small bay under the so called citadel; but there is a safer and in every way preferable landing place about a mile to the northward. My object being chiefly to take sights of the sun, for time, and compare the chronometers used on shore as soon as possible with those on board, I preferred landing as near as I could to the place where the lamented Captain Foster observed; but it was difficult to ascertain the house in which his pendulum observations were made. Not even the governor could tell me, for he had arrived since Captain Foster's departure; and most of the inhabitants of the island had changed their dwellings frequently, being all exiles from Brasil.

"The governor was a major in the Brasilian service, born at Pernambuco, and under his command were 200 black troops, and about 800 human beings, only 30 of whom were women, and a very few children.

"We obtained some firewood from some of the islets northward of the principal island; but it was full of centipedes, and other noxious insects, from which it was not easy to free it, even by charring and washing; water we did not try to get, because of the heavy surf, but there is no scarcity of it on the island. Neither live-stock nor vegetables could be procured from the apathetic inhabitants.

---

* See, more at large, Mr. Webster's Narrative, Vol. II. pp. 14—21.

"This place is rather picturesque; and the lofty barren peak, already mentioned, is conspicuous from every point of view. Near the summit is a station from which a look-out is kept, not only over all the island, but over many leagues of the surrounding sea; so that neither ship nor boat can approach or depart, during daylight, without being noticed.

"No boats are allowed to be kept on the island, and no intercourse is held with shipping without permission, and the strictest inspection."—*Narrative*, &c., Vol. II. p. 58.

The climate of these isles has been described in page 5. For the phenomenon called the *Rollers*, which occasionally prevails here, see page 33.

THE ROCCAS.—These are dangerous low kays, 16 or 17 leagues to the westward of Fernando Noronha, and on which the Britannia, East India ship, and King George transport, deceived by the currents, were lost in 1805. The kays, or islets, are sandy, with shrubs upon them; they cannot be seen from the mast-head, in the clearest weather, at the distance of more than 3 leagues. At their N.E. end is a high rock, and the sea breaks exceeingly high all round them. The ship *Glory*, at 2 miles to the West of the reefs, found bottom at 28 fathoms, coral rock. The current here was found to set 2½ miles hourly to the westward. Rise and fall of tide, 6 feet.

5.—BLAESDALE'S CORAL REEF.

On the 15th of October, 1819, the brig Richard, of Ulverston, Captain Blaesdale, struck on a coral reef, in about 0° 56′ or 0° 57′ North of the Equator, and longitude, by account, beyond 41° W.—The following is an abstract of the Richard's log. "Friday, 15th of October, 1819; fine moderate weather; ship going three knots: at 6 p.m. grounded; did not remain fast above ten minutes. Water smooth; saw no breakers. In a few minutes after sounded, but got no bottom with 125 fathoms of line. Latitude at noon, by good observation, 0° 57′ N. Run West until 6 p.m. Lon. 41° 22′ W. The vessel drew 11 feet of water: in one hour there were 18 inches of water in the well. When the ship arrived at Parà, whither she was bound, three holes were found, each about the size of a man's hat, and nearly through her bottom, and several large pieces of white coral were sticking in different parts."

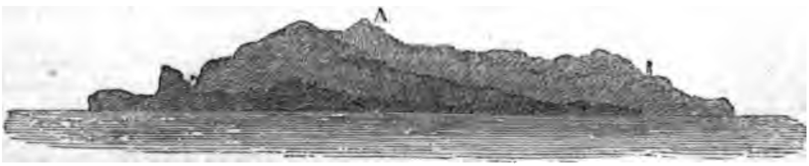
6.—SHOAL OF MANOEL LUIS, OFF MARANHAM.

This dangerous reef lies in 0° 52′ 10″ S., lon. 44° 12′ to 44° 14′ W. It had long been known to exist, but its exact situation was not ascertained until 1820, when it was found by the Baron Roussin of the French Navy, who is said to have had a very narrow escape when searching for it.

The reef, which lies 0° 1′ 30″ East of St. Luis, or Maranham, is "more than half a mile across from North to South, but not less than 3 miles in an E. by S. and W. by N. direction, and is formed by a cluster of conical rocks, whose heads are just beneath the surface of low tides, having small openings of deep water (8 to 10 and 17 fathoms) between them, which renders it the more dangerous; as in case of striking thereon, a vessel would, most probably, go down immediately." A more copious description of this shoal is given hereafter, in the Directions for Maranham, &c.

7.—ISLET OF TRINIDAD, MARTIN VAS ROCKS, ETC.

The little island of Trinidad has been correctly placed on our charts, by the survey of M. Bérard, an officer of the *La Coquille*, commanded by Captain Duperrey, in Oct., 1822.



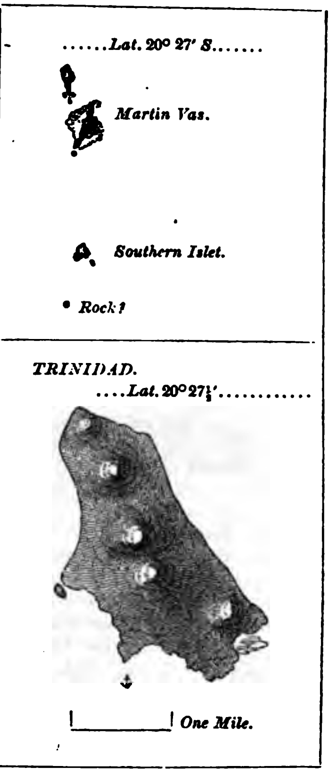
Trinidad; the point A bearing W. 7° N. true, or W.N.W. ¾ W. by compass, 4½ miles distant.

A copy of his survey of this and the adjoining Martin Vas Rocks is annexed. The S.E. point of Trinidad is in lat. 20° 29′ 55″ W. Variation, 70° 46′ 38″ W.

Description and Directions.—In approaching Trinidad from the eastward, when running on its parallel, you will make the three islets or rocks of *Martin Vas*, which may be seen at the distance of 8 or 9 leagues from a ship's deck. These rocks are very remarkable, and cannot be mistaken; they lie North and South from each other, the distance from the outer rock being about 3 miles. The central rock is very high, with tufts of withered grass scattered over its surface; the other two are entirely barren. There is a passage between the southernmost and central rocks. The northernmost almost join. In clear weather Trinidad is distinctly seen from the rocks of Martin Vas, and may be descried 16 leagues off.

This island is about 6 miles in circumference, the land very unequal, and at best no more than a cluster of rocks, with some shrubs in the valleys. The northernmost side is quite barren, but to the southward all the interstices of the rocks are filled with evergreens of several kinds; there is also a quantity of sea fowl and rock fish, and many wild hogs.* The generality of the wood is very small, though there are trees of 18 inches diameter toward the extreme heights.

Trinidad is surrounded by sharp rugged coral rocks, with an almost continual surge breaking on every part, which renders the landing often precarious, and watering frequently impracticable; nor is there a possibility of rendering either certain, for the surf is often incredibly great, and has been seen during a gale at S.W. to break over a bluff which is 200 feet high.



The island is supplied with very good water from two small streams down the East and S.W. sides of it, besides a small issue from the rock which forms the S.W. extremity; not one of them will fill a tube of 6 inches in diameter, and there is a doubt whether these runs are temporary or perennial, though they always produce a small quantity of water sufficient to preserve the existence of a few wretched inhabitants. Lieutenant Thomas Hamilton, from whose account this detail of Trinidad is chiefly extracted, speaking of the anchorage, says that they anchored off the West side of the island, at a mile from the shore, to be able to weather it on any tack should the wind happen to blow on, "being directed," continues that gentleman, "to do so by Captain D'Auvergne, who informed us of the wreck of the Rattlesnake and the miraculous escape of the Jupiter and Mercury." They prudently avoided the common anchorage, which is about a musket shot from the shore, in 18 or 20 fathoms of water. On that side there stands a stupendous arch or hole in the rock, like that of Fernando Noronha, and two very remarkable rocks, one called the *Monument*, and the other the *Sugarloaf*.

The Monument is 850 feet high, of a cylindrical form, and almost detached from the island, with large trees growing on its top. This had been named, in 1700, by Dr. Halley, the *Nine Pin*.* The Sugar Loaf, at the S.E. end, is 1,160 feet high, of a conical form, with trees likewise on its summit, and, whenever it rains hard, a cascade of above 700 feet makes there a beautiful appearance. The arch is a natural passage, made by the sea through a bluff about 800 feet high; it is 40 feet in breadth, nearly 50 feet in height, and 420 in length; the depth of water above 3 fathoms. When the sea is moderate, you may see through this arch into the only bay in the island, and have a view of a distant rock covered with trees, which renders the prospect extremely picturesque.

---

* Captain Edmund Halley, of the Paramore Pink, afterwards Dr. Halley, Astronomer Royal, landed on this island 17th April, 1700, and put on it some goats and hogs for breed, as also a pair of Guinea fowl, which he carried from St. Helena. "I took (says his journal) possession of the island in His Majesty's name, as knowing it to be granted by the King's Letters Patent, leaving the Union Flag flying." When the English went to Trinidad in 1781, in order to ascertain whether a settlement was practicable there, they did not find it, after a survey of two months, to answer their expectations. Commodore Johnstone planted various roots on the different heights, but they all perished in a short time for want of water.

Lieutenant Hamilton says, "We first saw the island on the 5th of June, on our passage to the Cape of Good Hope; we had then variable winds and calms; and on making it a second time, the 8th of November, we had exactly the same winds and weather, accompanied by a heavy squall of wind from the westward. During our stay there, above two months, the prevailing wind was from N.N.E.; hence I conclude the S.E. trade wind is not to be depended on, although the island is so far within the Tropic of Capricorn."

The American commander *Amasa Delano* visited Trinidad in 1803, and he again describes it as mostly a barren rough pile of rocky mountains. What soil there is on the island he found on the eastern side, where there are several sand beaches, above one of which the Portuguese *had* a settlement, and have, he says, done much work in making streets or roads over the valleys, levelling down small hills to make the roads good. They had walled in a number of inclosures for the purpose of making fields, at the expense of much labour. "This settlement was directly above the most northerly sand beach on the East side of the island, and has the best stream of water on the island running through it. It might be possible (he adds), in pleasant weather, to get it off from this place, but we got ours off the South side from the next best watering place or stream. This falls in a cascade over rocks some way up the mountains, so that it can be seen from a boat when passing it. After you have discovered the stream, you can land on a point of rocks just to the westward of the watering place, and from thence may walk past it, and when a little to the eastward of the stream there is a small cove between the rocks where you may float your casks off.

"Wood may be cut on the mountain just above the first landing place, and you can take it off if you have a small oak boat. The method in which we filled our water was carrying it in kegs and buckets to the place where we floated our casks on shore.

"All the South side of the island is indented with small bays; but the whole is so iron-bound a shore, and such a swell surging against it, that it is almost impossible to land a boat without great danger of staving it. The South part is a very remarkable high square bluff head, and is very large. There is a sand beach to the westward of this head, but I should caution against landing on the beach till it is well examined; for just at the lower edge of the beach, and amongst the breakers, it is full of rocks, which are not seen until you are amongst them. Where we landed we saw the remains of at least two or three boats which had been knocked to pieces by landing. We found plenty of goats and hogs. The latter were very shy, but we killed some of them and a number of goats. We saw some cats; and these three sorts of quadrupeds were the only animals we saw on the island.

"If a ship is very much in want of wood or water, it may be got at Trinidad: or if the crew should have the scurvy, it is an excellent place to recruit them in, as you can get plenty of greens on the S.E. part of the island, such as fine purslain and several other kinds. These, together with the fine sweet water, would soon recruit a crew.

"A ship must never be anchored at this place with common cables, or she will be likely to lose her anchors; but if she has chains for her anchors, the rocks cannot cut them. The navigation is safe for a ship all round the island within the distance of a mile. *Martin Vas Rocks*, or more properly islets, lie about East, 9 leagues distant, but there do not appear to be any dangers between them and Trinidad."

Commodore Owen, in H.M.S. *Leven*, made Trinidad on the 25th of April, 1822; and he says that *Trinidad*, excepting the S.E. Bay, appeared like a mass of rocks. The *Nine-Pin*, on the western side of the island, appears to be a basaltic column, and is very remarkable from a slight inclination in its position, which makes it look from certain points as if about to fall. A few stumps of euphorbia and some other shrubs were scattered over its otherwise barren surface: the vicinity of S.E. Bay alone bearing an appearance of fertility.

---

* A view of it is given on the first page of Sir James Ross's interesting narrative of his *Antarctic expedition*.

MARTIN VAS ROCKS.—These rocks, as before noticed, are high and barren. The central one is the largest, and it may be seen, from a ship's deck, at the distance of 10 leagues. When bearing South the rocks seem nearly in a line. The northern and central rocks are near each other, but between the central and southern rocks is a good channel. Here the *Chesterfield*, in 1800, observed the latitude 20° 28′. When through, she hove-to in 12 fathoms, with the largest rock E.N.E. about a mile, the bottom then visible, and caught plenty of rock-cod and other fish: the boat, in sounding, found the depth decrease gradually, over a rocky bottom, to 1½ fathoms close to the largest rock.

The North rock is small, and most westerly: all are steep and inaccessible; the distance between the extremes is about 3 miles.

According to M. Bérard, whose survey is given on page 94, the largest islet is in lat. 20° 27′ 40″ S., lon. 28° 52′ 38″. This position has been confirmed by Captain H. A. Van Karnebeek, of the Netherlandish frigate *Prins Hendrik*, who makes its lon. 28° 52′ 45″ W. Hence the true bearing from Trinidad is W. 4° S. (or W. ⅓ N. by compass), and the distance is 26 miles.

SUNKEN ROCK NEAR MARTIN VAS.—From a recent work,[*] we give the following:—*Mr. Menkman*, captain of the merchant ship *de Amstel*, has given information relative to an hitherto unknown sunken rock, near the Martin Vas Rocks as follows:—

"In the forenoon of the 11th of May, 1842, at 10^h, we saw the Martin Vas Rocks in the S.S.W.; at 12^h they bore S.W. by W., distant from us 12 miles.

"In the afternoon, at 2^h 30′, they bore South, 2 miles distant, and we discovered a *sunken rock*, a short mile S.W. from the said rocks. Var., 6° West."

8.—ABROLHOS OR BRASIL BANKS.

Between the parallels of 16° and 22° S., and between lon. 36° W. and the coast, there is an extensive bank, or rather collection of banks, with deep water between them, the number and nature of which we as yet know very imperfectly. The Abrolhos Islets occupy a central position among these coralline shelves, and have been well surveyed. So also have two patches, now placed on the charts, under the name of the *Victoria* and *Hotspur Banks*, from the surveys of Captain Denham, in H.M.S. *Herald*, in 1852. But each of these had been before known and partially explored, as will be presently seen. These, then, are well determined; but of others enumerated here, the positions and extent must be left for future examination and consideration.

Commencing with the northward, the ships *Royal Charlotte*, *Brunswick*, and *Glatton*, in June, 1803, when in lat. 16° 0′ S., lon. 37° 48′ W., had soundings in 22 and 25 fathoms, and thence gradually deepening from S.S.E. to S.E. 15 miles, to 60 fathoms. This may be the edge of the off shore soundings, as the *David Scott*, in June, 1810, in lat. 16° 35′ S., lon. 38° 26 W. had from 19 to 24 fathoms, the coast in sight bearing W.S.W., distant about 17 leagues.

The next portion is a patch of from 31 to 70 fathoms, coarse sand and coral, lying in about 16° 50′ S., lon. 36° 10′ W.

The *Hotspur Bank*, presently described, is 1° to the South of this. In June, 1792, the *Busbridge*, when in lat. 18° 35′ S., lon. 35° 54′ W. by chron., and 35° 56′ by lunars, had soundings in 30, 32, and 33 fathoms coral rock. The next to the southward is a shoal, marked on the chart, of 30 to 73 fathoms, in lat. 20° 15′ S., lon. 36° 25′ W. To the West of this is the *Victoria Bank*, presently described.[†] In lat. 31° 56′ S., lon. 38° 56′ W., some discoloured water was seen by the *Zephyr*, as shown on the chart; and at 1° West of this is the sounding obtained by H.M.S. *Pilot* in 1843.

---

[*] *Verhandeligen enz. betrekkelijk het Zeewezen en de Zeevaartkunde*, door G. A. Tindal en Jacob Swart, Amsterdam, 1843.

[†] An island distinguished by name of *Ascensao* or *Portuguese Ascension* has formerly been described, and said to lie at the distance of about 100 leagues to the westward of the isle of Trinidad. Doubts have long since been entertained as to its existence, and we have the best reasons for considering them as verified.

La Pérouse, in 1785, sought for it without success, as far as the longitude of 7° West of Trini-

All these banks have more or less of one characteristic, that of having a hard coralline crust, and also of being very steep-to. The depths between them have not been ascertained, but exceed from 160 to 250 fathoms. As they might be serviceable in approaching this coast, as a means of verifying the positions, or indicating the proximity of the continent, it is much to be desired that a more complete knowledge of their extent, number, and character were recorded.

HOTSPUR BANK.—The existence of this bank, one of the number before alluded to, was first determined by a sounding of 47 fathoms in the *Hotspur* in 1814. Captain H. M. Denham, in command of H.M.SS. *Herald* and *Torch* steamer, on their way to the Feejee Islands, in October, 1852, examined and determined its extent. "I shaped a course that should test this single sounding of 47 fathoms; and obtaining quicker soundings as we approached the assigned position of the *Hotspur*, our casts jumped suddenly from 200 fathoms, no bottom, to 27 fathoms coral; which, being 7 miles in advance of the 47 fathom spot, at once gave rise to an idea that the bank might cover a considerable space with perhaps shoaler water. No time was lost in taking up an anchorage upon it. The atmosphere favoured our morning, noon, and evening observations, so that latitude and longitude were satisfactorily obtained. It blew sufficiently moderate from N.E. to detach the boats, and before the swell disturbed us, we obtained sufficient to show that we had anchored upon a steep-to bank of coralline crust, extending 14 miles N.W. and S.E., and 10 miles in a N.E. and S.W direction, with as little as 25 fathoms on the middle of it, and which deepened suddenly from 30 fathoms to 70 and 200 fathoms, without bottom. We could not detect the slightest current nor discoloration that would indicate so abrupt a feature in ocean water, by ripple or otherwise. The lead brought up a few specimens, but the dredge and anchor brought up nothing, and the fishing lines were very successful. We determined the latitude of the N.W. extreme of this bank to be 17° 51′ 30″ S., and the longitude, with the subsequent rates at Rio, 36° 5′ 9″ W., and the variation 6° 33′ W."

VICTORIA BANK.—For a knowledge of the extent of this bank we are also indebted to Captain Denham. Its existence was first made known by the *Montague* in 1813. A portion of it had been sounded by Commodore Sinclair, in the U.S. frigate *Congress*, in 1817, as related in Brackenridge's account of the voyage: the depths there found were 35 fathoms, and they were lost in lat. 20° 30′ S., lon. 37° 30′ W. It was therefore called the *Congress Bank*. In August, 1849, the U.S. ship *John Adams* explored its S.E. position.* Captain Denham's remarks, continued from the previous description, are as follow:—

Pursuing our search for the Montague shoal, at 9 miles farther eastward than it was reported, we struck it in 31 fathoms, from a long line of 180, with the deep sea lead, and no bottom. We were forty-eight hours buffeting with a south-easter before we could obtain an anchor hold of this bank, to which my attention had been especially directed. Eventually we occupied three positions on it; the *Torch* joined us, and we soon traced out a tolerably flat bank of 35 fathoms, bending to the South, in its general direction from N.W. to N.E., 72 miles in length, and 12 in breadth, with one spot at its N.E. extreme of only 19 fathoms. We found a current to the S.W. of three-quarters of a mile per hour. The same description of fish as on the Hotspur were found in abundance. The swabs which we let down on it from different parts of the ships entangled some massive specimens, while the crusted surface would yield nothing to the dredge or palm

---

dad; and M. Krusenstern, in 1803, prosecuted the search so much farther to the westward that its non-existence within 37° West appears certain. Add to this that the governor of St. Catherine's informed M. Pérouse that the governor-general of Brasil had despatched a vessel in the preceding year to survey the island, but that it could not be found, and it had, consequently, been expunged from the charts.

Notwithstanding this, it has been said that land was seen by the commander of the *Telica* steamer, on her passage to Peru, in 1825, which *appeared* to lie in lat. 20° 25′, and lon. 37° 8′, or nearly so. At noon the vessel was in or about 20° 20′ S. and lon. 37° 28′. The island bore S.E. by E. ½ E. by compass, distant, by estimation, about 8 leagues. There can be but little doubt of the error, as an island visible at such a distance, must have been frequently seen, but the spot indicated is near to the East end of the Victoria Bank, and it is possible that it may have formerly been nearer the surface.

* See Capt. Powell's (commanding the *John Adams*) letter respecting his soundings in the *Annales Hydrographiques*, vol. iii., p. 239, and the Naut. Mag., 1850, p. 187.

of the anchor. Our observations on this bank place it in lat. 20° 45′ 8″ S., lon. 37° 47′ 33″ W. The variation (also adjusted for change of subsequently ascertained deviation) came out 3° 43′ W.*

The **Pilot Bank**.—H.M.S. *Pilot*, in 1843, struck a bank of soundings in from 9 to 15, 16, and 35 fathoms, extending N.E. and S.W., from lat. 21° 38′ S., lon. 39° 35′, to lat. 21° 51′, lon. 39° 50′, or about 15 miles in extent. Within this there is a deep of above 160 fathoms between it and the shoal water, extending off Cape San Thomé. Whether a less depth than this of 9 fathoms exists in this locality has been doubted, but in the subsequent description of the Brasilian Coast there will be found a statement, that 5½ and 4½ fathoms had been found within 25 miles of the Cape. This must be left for future determination, though the uneven nature of the bottom in this vicinity would render such a fact not improbable.

9.—MEDEIROS ROCK.

A rock, just awash, in lat. 25° 41′ S., lon. 44° 47′ W., or 132 miles S.W. by S. of the entrance to Rio Janeiro, was seen by a pilot of Bahia, named Medeiros, in February, 1811. The position here given is uncertain.

10.—LAUREL SHOAL, OFF THE RIO DE PLATA.

The *Laurel*, M'Donald, from London to Valparaiso, put in to the River of La Plata on the 19th of June, 1822, having been obliged to bear up to repair some damage sustained by a heavy sea breading on board her.

The master reports as follows:—That, on the 15th of June, he discovered a shoal in lat. 36° 28′ S., lon. 51° 30′ W.; that it appeared to be about a mile long, and the same in breadth, with a sea breaking very high over it; that it had the appearance of sand, and little water on it. He passed within half a mile, and then hove-to, sounding with 90 fathoms of line, and found no bottom. He further states, that he had a good chronometer on board, and was 6 miles [which way ?] out of his longitude when he made the port of Monte Video.—*Newspaper*.

11.—THE ISLAND OF ASCENSION.

This solitary island, lying in the track of shipping bound to the Cape, has received much attention from the English government, towards its resources as a place of refreshment for vessels passing. As will be found by the subsequent description, its natural advantages have been signally improved, and are still under course of increasing prosperity.

The position of Ascension seems to be tolerably well ascertained, and may therefore be depended on as a point of departure, as may be seen by the results given by the following observers.

Captain Sabine, who made some observations in 1822, for fixing the position of this island, gave it as in lat. 7° 55′ 48″, lon. 14° 23′ 46″. These observations consisted of 164 (16 sets) lunar distances, made in the new Barrack Square during the months of June and July in the above year.

According to the chronometric measurements of Captain Foster from St. Helena, Barrack Square is in lon. 14° 25′ 23″, and by a similar measurement by Captain FitzRoy it is in 14° 24′ 40″ W.

Commodore Owen gives the longitude of Georgetown, from observations made in the *Leven*, in 1826, in the N.W. bay of Ascension, as 14° 26′ 20″; and Captain Vidal, in 1828, made it 14° 26′ 12″.

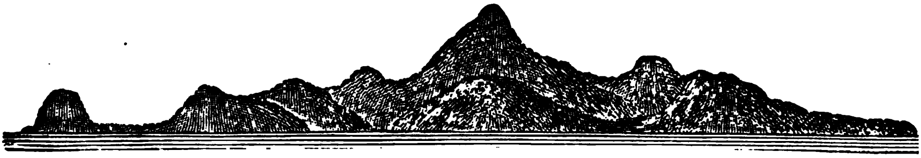
The mean of these five authorities is 14° 25′ 18″, the longitude which is given in the table.

It appears from the survey, that the eastern extremity of the island is less than 8 miles East of the meridian of the Barrack Square, or Cross Hill; whence it may be inferred, that if 14° 25′ 18″, the present determination, be the true longitude of the Barrack Square, no part of the island is in a less western longitude than 14° 17′, and that the authority for the position assigned by Professor Lax to Cross Hill is about 10 miles, and that of the French table nearer 20 miles, in error.

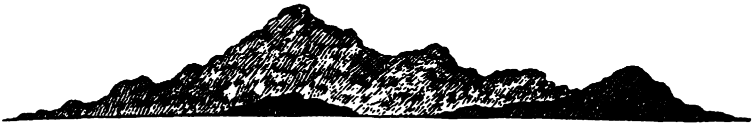
---

* Nautical Magazine, Jan., 1853, pp. 17, 18.

The following appearance of the island was taken by Captain J. W. Monteath.*



Ascension Island, N.N.W. ½ W. 9 miles, taken on board the ship Mary, by Captain Monteath, January 15th, 1819.



Ascension, bearing West, 7 or 8 leagues.

The Island of Ascension† is of an elliptic form, its greatest diameter from East to West being 7⅜ miles, and its shortest, from North to South, 6 miles. The area of its base at the surface of the sea is 38 square miles, and its circumference about 22 miles.

Ascension is of volcanic origin, and of comparatively recent formation, its surface being exceedingly irregular, and presenting from the sea a barren and forbidding appearance. The highest peak, or *Green Mountain*, is elevated 2,818 feet above the sea, and may therefore be seen from a frigate's deck at the distance of 65 miles. The latitude of this summit is, from several observations, 7° 55′ 22″ S., and if the longitude of the fort be 14° 25′, that of the peak will be 14° 20′. From the summit of the Green Mountain about forty hills may be seen of different magnitudes, being extinguished craters, which have at different periods of the volcanoes actually given vent to its fires. From many of these craters one may trace distinctly the direction of the lava currents on their way to the sea.

All the different varieties of the lavas of Vesuvius may be found here, apparently in a rapid progress of decomposition, so that at some future period this island, like other volcanoes, will be one mass of rich mould. Many of the round conical hills are already fit for being planted with vines, their soil being composed of ashes and a ferruginous earth, a decomposition of calcined ores of iron; of this description is Red Cross Hill, near the anchorage, having an elevation of 816 feet above the sea; but so dry and porous is the soil, that no sooner does the rain fall, than it is absorbed and disappears.

The principal cultivation is on and above Green Mountain, where it rains more frequently than on the less elevated parts of the island. The principal garden is 2,500 feet above the sea; here the climate is delightful, the temperature during the daytime being generally about 74°, that at the landing place near the fort being 85°. The temperature on the peak is still lower: my thermometer, exposed to the current of air sweeping over the peak, fell to 60°; this was at 1^h p. m., the instrument being in the shade, and the sun shining at the time. The summit of Green Mountain is covered with rock roses and several species of fern and mosses, indigenous to the island. There were about 100 acres of land cultivated in 1830, and above 1,000 more fit for cultivation by the plough, on and about Green Mountain, independent of many ravines and hollows, containing a rich soil, where no doubt fruit and other useful trees will be planted, so soon as the different fortifications shall be complete.

The climate of Ascension is perhaps as healthy as in any part of the world, and its salubrity is no doubt owing to the constant trade wind blowing in a moderate breeze, ventilating and cooling every part of the island; the dryness of the air, and the absence of marsh or moist soils contribute to the elasticity and buoyancy of the air, and renders the island a most desirable spot for an invalid, who might be transplanted from Tartar Stairs to the mountain in two hours, the distance being 7 miles, from a temperature of 84° to one of 74°.[*]

---

* Another view, from the anchorage, is given on our general chart, and a beautiful one in Mr. Webster's Narrative, Vol. I. p. 385.

† *The following* description is from the *Nautical Magazine*, 1841, p. 690, by *Mr. W. Walker, Queen's harbour master.*

Abundance of purslain grows among the rocks, stones, and crevices of the cliffs; this vegetable is eaten by the cattle, and is capable of keeping them alive and in tolerable condition, as was evident from a bullock making his escape, and being absent five or six months, during which time he had nothing to eat but purslain.

The animals that are found in a wild state are rats, cats, goats, and land-crabs; the cats are numerous, but instead of destroying the rats, they take up their abode in the neighbourhood of places frequented by the different species of sea-fowl that visit the island. The goats, rats, and land-crabs are great enemies to farming, destroying all sorts of plants and fruit; they are, therefore, killed in great numbers by the garrison, and may ultimately be extirpated. The weather side of the island is high and inaccessible, with an iron-bound coast, and deep water. No part of the coast is accessible from South-west Bay, round the South point of the island, and as far as North-east Bay.

From the South point of South-west Bay, and along the lee side of the island to English Bay, there is an excellent anchorage in from 10 to 20 fathoms water, sand, and mud; within the distance of 6 miles 300 sail might be anchored at the distance of 100 fathoms from each other; for although the coast from the fort round to South-west Bay be rocky, with foul ground extending about half a mile into the sea, yet I found the bottom perfectly clear without the depth of 10 fathoms.

I have already stated that upwards of forty craters have, in former times, been in a state of activity. Now the island lying within the limits of a constant brisk S.E. trade wind, the ashes, pumice dust, &c., ejected by the volcanoes, have been carried by the wind into the sea to leeward of the island, and formed an excellent anchorage; the bank thus formed has, in the course of time, been augmented by vast quantities of small shells, ground up together, and polished by the action of the waves; and it is those fine pieces of shells that form the various beaches on the lee side of the island, where the sea turtle deposits her eggs to be hatched by the heat of the sun.

Wherever there is a prevailing current in the air or ocean, at an island, the dust in the air, or the mud in the sea, is carried by the current, and deposited to leeward, where a bank is formed on which ships may anchor; this is the case at St. Helena, Ascension, the Madeiras, the Canaries, Cape Verde Islands, &c.

Ascension is visited by the sea turtle between Christmas and Midsummer, and it is supposed that during the above period each female makes three or four nests. The animal remains on the coasts of the island till fifty or sixty eggs are fit for being deposited in the sand. She then lands on the beach, between ten o'clock at night and four in the morning, and going sometimes 150 or 200 yards above high water mark, digs a large pit, about 8 or 10 feet in diameter, and 2 or 3 feet deep, where the eggs are deposited and carefully covered with sand; she then leaves them to nature. In about nine or ten weeks the young turtle breaks its prison, and working its way upwards through the sand, gains the surface, and proceeds directly to the sea. Should this journey happen in daylight, many of the young animals are picked up and devoured by the man-of-war bird, who may be seen hovering over the turtles' nests. For this species of warfare in destroying the young turtle, the man-of-war bird is shot, or otherwise destroyed, by the officers of the garrison.

There are abundance of excellent fish to be caught among the rocks throughout the year, such as rock cod, conger, cavalhos, &c.; they are so plentiful that a boat's crew may catch enough for a frigate's ship's company. The best place for fishing is on the reef, near the anchorage, beginning with a piece of salt pork for a bait, and afterwards cutting up a fish for bait. Cray-fish are also caught near the mouths of caverns amongst the rocks toward English Bay. The method is as follows:—hang a piece of fish or pork by a string a short distance below the surface of the water at the mouth of a cavern, the cray-fish observing it will rise to the bait, and may be taken by hand.

---

[*] The year is divided into two seasons; the hot months commencing in December, and ending in May; the cool season extending through the remaining months. The thermometer ranges throughout the year in the low lands from 70° to 88° (it has been as high as 90°), and averages 83°; in the high lands it ranges from 62° to 82°, and averages 70°. The island, I apprehend, is not subject to a *rainy season.—Captain Brandreth*, R.E.

The coast to leeward of the island is bold and clear from English Bay to the fort near Tartar Stairs. About a mile to the N.E. of the fort there is a small bay, with a spot of sand on it, on which a boat may land among wild and irregular climpers; this spot has been dignified by the name of Comfort Cove, and extolled very much above its real merit. From the foot of Fort Cockburn round to the westward as far as South-west Bay, the coast is, as has been already observed, rocky. The reef runs out about seven-tenths of a mile from the fort in a N.W. direction; it is composed of uneven masses of hard, pointed lava, with spots of white sand in the hollow places; there are many of these pointed rocks on which a ship would strike, and on some of which ships have actually struck; and to prevent such accidents for the future, a large buoy is now moored near the extremity of the reef, on a rock having 30 feet water on it. The following are its marks:—the flagstaff on the fort in a line with the N.E. corner of the jetty, near the crane at Tartar Stairs, and the peak of the Green Mountain, just touching the edge of Red Cross Hill. Should the buoy be gone, by keeping in 10 fathoms a ship will avoid all the dangers on the reef.

It sometimes happens that a very heavy swell sets in from the south-westward, occasioned by *gales of wind* without the limits of the trade winds in the South Atlantic. The long swell rolling in *against* the wind, and meeting with shoal water and the uneven rocky bottom of the reef, breaks high and with violence, sweeping away thousands of tons of sand from the beach into deep water; this sand is again thrown on shore in fine smooth water.

These *rollers* are heaviest when the sun is in the northern hemisphere, and storms and gales in the South Atlantic, in the neighbourhood of Cape Horn.

Two pair of moorings are laid down near the landing place for the use of H.M. ships; one pair abreast of the middle of the sandy bay to the eastward of the fort, and as near the weather shore as possible. The ground-work is a line-of-battle-ship's chain, and the bridles are tapered from line-of battle-ships' chain to sloops, the small end being suspended to the buoy for the convenience of being taken up *without lighters.* The other pair is laid down near the edge of the reef, one of the anchors being among the rocks, thereby leaving the best of the anchorage unoccupied.

At the inner mooring, in case of necessity, one vessel might be hove down by means of another.

About half a mile inland from South-west Bay, and behind the lava currents, lying near the beach, there is a tract of land of comparatively smooth surface, and of considerable dimensions; the soil is very rich, but so dry and dusty as seldom to exhibit any other verdure than a little purslain. A little further to the south-eastward, and behind some high conical hills, there is a sandy plain, having an area of perhaps 20 or 30 acres. This level is surrounded by the above mentioned conical hills on the North, and on every other side by high ridges of lava, through which the rains have worn "fiumari," or water-courses, by which considerable quantities of sand and pumice have been discharged into the plain. I could trace very distinctly a line of pumice and other floating materials on the foot of the hills along the lee side of the plain, left as the *last high water mark*, and showing most clearly that at times there has been a depth of several feet of fresh water in the valley, a quantity sufficient to supply the island for many years. This affords the strongest proof of the occasional heavy rains that must fall at Ascension, and points out the propriety of constructing tanks in eligible situations.

Ascension, without water and wood, was formerly frequented only on account of its turtles. "Of this article," says Captain Lesley (1775), "the island furnishes the finest in the creation; the females from, I suppose, hundreds of leagues around, come here to lay their eggs, on which employment they are taken at night; so that they are not only fat and large, but in the highest perfection for eating. Their weight, in general, is from 400 to 700 pounds. They are, of all I ever tasted, the fattest and finest; all others I ever saw before bear no comparison with them."

We subjoin Captain Maxwell's description of this island, written in 1793.

"Ascension is an uninhabited island, about 20 miles in circumference; composed of porous rock, calcined earth, and pumice stone, the surface in general powdered, as it were, with sulphur, and hot vitriolic fumes issuing from the mountains, destroying all vegetation; not a blade of grass to be seen, though there are many wild goats; these *may possibly* have reservoirs of water, and hardy plants to glean on the windward side, *where the destructive vapours* cannot reach.

"The bay abounds with fish, particularly a small rock cod, but they have all a black appearance, and when dead grow putrid remarkably soon, which should deter people from using them, as many have experienced their deleterious effects.

"Vessels bound to English Road should run down the North side of the island, and take the N.W. point within 2 cables' lengths, being a steep rocky shore; then brace up to fetch in with the bay, which they may easily do, to anchoring ground, the first stretch within a third of a mile of the beach, in 10 or 12 fathoms of water, fine sandy bottom, bringing the flagstaff on the hill to bear S.S.E.

"There is another cove under the South point, about 2 miles from Rat Corner, or the S.W. point, called *French Road*, and better frequented by turtle; but it lies very open to the sea, and is dangerous for boats, on account of its rocky beach and heavy surf. This bay is on the North side of the S.W. point, and turtle may be found here when it is not to be met with in the other bays.

"Vessels calling at Ascension for turtle have often turned fifty in a night, of from three to five hundred weight each. They may be found in great abundance eight months out of the twelve, say June, July, August, and September excepted, when the season is too cold: they are a wholesome, nutritious food, and prove a very salutary refreshment to mariners on long voyages."

During the confinement of Napoleon on the Island of St. Helena, the British government, in 1815, deemed it requisite to take possession of Ascension as a military station, and a sloop's crew, under Lieutenant Cuppage, was maintained upon it, who contrived to form a few small gardens; after which, in 1821, Major John Campbell, with two lieutenants and a small party of marines, proceeded in the *Heron* brig, Captain Hanmer, to garrison the island for three years. Accounts, dated August, 1821, announced the arrival of the new governor; and the garrison, at the period of the Pheasant's visit, in 1822, consisted of the party of the Royal Marines above mentioned, commanded by Major Campbell.

The only buildings on the island at the time were those which had been erected for the accommodation of the garrison; they consisted of an officers' and soldiers' barrack, and a store-house, forming three sides of a barrack square, situated near the landing place on the N.W. side of the island.

Near Dampier's Springs a house was built, and gardens laid out for the cultivation of vegetables; but little more was then effected on the island, except the erection of some scattered huts on the leeward shore, and the clearing of a few necessary roads. After the death of Napoleon, it being determined by the Admiralty Board to make Ascension a depôt and place of refreshment for the use of the African squadron, a detachment from the corps of Royal Marines relieved the naval garrison in 1822, as above stated. A year after this epoch in the annals of Ascension, a fever of the most virulent kind was unfortunately introduced on the island by H.M.S. *Bann*, which for awhile suspended the exertions of the new settlers. Many women and children, the families of the soldiers, were by this time located there, the population amounting altogether to about 150 souls; but sad to say, of these more than a third were swept off in a short space of time by the exterminating pestilence. The crew of the man-of-war, whose encampment on the under plains had caused this evil, suffered in even a greater proportion; and Ascension, possessing a climate the salubrity of which was the theme of every visitor, became a lazar house of corruption. The mountain alone escaped; the fever reached its base, and found several victims at Dampier Springs, but here its course was stayed, communication with the agricultural station being put under severe restriction, and all supplies of vegetables and fresh meat thence derived were placed at certain points of road, from whence they could be conveyed to the town without danger arising from the contact of parties engaged on this duty.

In a few months the fever, which was declared to be of the same character as that so fatal to our West India islands, seemed to have expended its power; the tone of health in the settlement was restored, and the works once more progressed.*

Again,—"Ascension, heretofore regarded as an impracticable heap of ashes, is now in a most flourishing state of progressive improvement as to its resources, both natural and artificial. When H.M. brig *Slaney* left the island, on the 27th of February, 1827, roads were constructing from the several springs (sixteen in number) to convey water to the garrison; and hopes were entertained of being able to supply a squadron with that essential article, by means of iron pipes, from the principal spring to a reservoir near the beach. Fruit, such as pines, Indian gooseberries, and plantains, had been successfully cultivated. Potatoes, onions, carrots, peas, French beans, and almost every esculent vegetable, had been produced; and thus, from a desert cinder, nature has been courted successfully to yield most of her useful vegetable productions. Only two deaths from sickness occurred at Ascension during the preceding two years: and when we consider that gales of wind are unknown to have visited the anchorage there, the value of the island as a rendezvous, and a depôt for stores and provisions, for a squadron of observation, destined to cruise either on the African or Brazilian coast hereafter, will obviously repay the liberal attention that has been bestowed upon it."

---

* Rough Notes on the Island of Ascension, in 1836.—*Naut.* Mag., 1837, p. 785.

In May, 1827, the William Harris, a transport, returned to Portsmouth, after having landed at the island a variegated cargo of live stock, hares, rabbits, pheasants, partridges, &c., seeds of vegetables, agricultural implements, and a supply of necessaries, with which the vessel sailed from England a few months before, for the supply of the garrison. She also took thither poultry and horses from St. Jago.

The following particulars of this island have been given by Mr. Webster.—On the 10th of February, 1830, H.M. ship *Chanticleer* left St. Helena, and after a delightful passage of four days arrived at Ascension. The scene from the anchorage has a barren aspect, although warmed by the light colour of the sand. The island is interspersed with broken ridges of lava and scattered hills, separated by extensive plains. The surface generally consists of ridges of naked rock, hills of cinders, and plains of ashes, dust, and lava. The general contour of the hills, and the blending of their different colours, impart a soft and pleasing effect on the mind of the spectator; the blackness of one hill is relieved by the ash-grey tinge of another, and the brick-burnt soil of one cone is contrasted with the pumice or brown lava of an adjacent or an opposite one. By this variety and alternation of colour the monotony which would otherwise prevail is broken, and the scenery in some parts assumes a wild and picturesque character.

On the lee side of the island is the garrison establishment, now dignified by the name of *George Town*, and consisting of wooden houses. Besides these, contiguous to them, is the government store, a substantial stone building; a very neat and respectable hospital establishment on a small scale, for the reception of patients from the ships, and for the purpose of supplying them with medicine; a very good smith's shop; a public mess room, and a row of humble buildings for the garrison officers. On Cross Hill, close to the anchorage, is a signal post, which communicates with the mountain house; and Captain Bate, the commandant, had erected a house for himself on the brow of a hill to the eastward of the garrison. An admirable pier or jetty, terminated by a rock, forms the landing place, on which is a crane, for the purpose of loading and unloading boats.

The establishment at George Town consisted of 110 marines, with 4 lieutenants, a surgeon with his assistant, an agent-victualler, and 50 negroes, or kroomen, from the coast. The garrison comprises many artificers, distinguished by energy and industry. They have erected batteries, built houses, made roads, constructed the pier above mentioned, excavated tanks, blown up rocks, levelled hills, begun boat harbours, walled in turtle ponds, among other works, under circumstances of no ordinary difficulty. They have formed gardens, have shown the mountain to be capable of cultivation; they have availed themselves of every advantage that nature has afforded them; they have explored the resources of the island with minute accuracy, and have turned everything to the best purpose. The result is, that a small party may be maintained there comfortably, and afford assistance to vessels in the way of fresh provisions; but it is like a slender reed in the hand; if it be overloaded in its establishment, if many persons be allowed to settle on the island, it will wither away under the accumulated pressure; the main object of all the care bestowed on it will be defeated, by the supplies it affords being required for its own settlers, leaving nothing for the ships that call there.

The hills are numerous and of various heights; but the most elevated one is that called the *Green Mountain*, from the light hue of the verdure on its summit. It is nearly in the centre of the island (toward the S.E.), and is 2,818 feet in height above the sea, rising as a graceful oasis amidst waste and desolation; for around it is to be found neither verdure, shade, nor shelter, but one entire field of lava. The lofty ridge of the *Green Mountain* arrests the watery vapours that would pass it, and supplying George Town, by means of pipes, constitutes the chief blessing of the island. It is said also to have 1,200 acres of land on its summit available for agricultural purposes. There is a good road from George Town to the Green Mountain; the distance to the foot of it being 3¼ miles [English], and to the summit, 6 miles. A party of men are usually employed on the Green Mountain in cultivating the land, attending the tanks, and looking after the live stock. The neat little establishment, called the *Mountain House*, is at an elevation of 2,250 feet, and is romantically situated on the brow of the hill. A little garden is attached to it, backed by a wall of black cinders, through which rushes a stream of cool refreshing water. The view from this place over the whole island is awfully grand: not a vestige of green is to be seen below the favoured mountain. Independent of the pleasure of the ride, it is worth the excursion only to obtain a draught of the cool water dripping from the fountain. Craters of extinguished volcanoes are seen in all directions over the mountain, amounting to about thirty. They vary from 100 to 300 feet in height, and are in general circular. One of these, more terrific and rugged in its appearance than the rest, is called the *Devil's Riding Ground;* this being an elevated mound, about half a mile in circumference, with a road winding round it to the summit, walled in on the lower side by a ridge of lava.

At the agricultural station on the mountain much has been effected by the small detachment which could be spared from other works. There the decomposition of volcanic matter is going on rapidly, and consequently producing a rich and productive soil; a large portion of which is cultivated with trees, shrubs, edible and other plants. In this soil, mosses, grasses, heaths, and flowers, have also been carefully and successfully planted. The botany of Ascension boasts 170 varieties. Among the more essential *vegetables* may be found balm, thyme, borage, horehound, potatoes, beet, parsnips, carrots, turnips, endive, lettuce, celery, mustard, parsley, fennel, sorrel, winter cherry or Cape gooseberry, arrowroot, horseradish, watercress, French beans, leeks, onions, shalots, artichokes, capsicums, cucumbers, pumpkins, tomatos, mushrooms, cabbages, &c.

All these are, of course, more or less in abundance as the season proves propitious to their culture. It is, however, fortunate that large tracts of land have been devoted to the cultivation of the sweet potato, which yields so plentifully, that this vegetable may always be procured. Several other edible plants are equally to be depended on; and the garrison and shipping have, for some years, been readily provided with refreshment of this nature.

The Green Mountain supplies the party at George Town with water, vegetables, fodder for horses, and pasture for a few cows. In the dales, here and there, a few bananas have been produced; and the pine-apple, though deficient in flavour. The Cape gooseberry, a delicious fruit, is very abundant on the mountain, and affords the luxury of a tart; it is a species of winter cherry. The castor-oil plant thrives there, and a crop of Indian corn has been produced. The residence on the Mountain is cool and agreeable, the temperature being generally 12° below that of the plains; but it is not without its disadvantage, being continually enveloped in mist, which renders the habitation damp, but not unhealthy. Goats were at one time very plentiful on the island, but they are now reduced to a small herd, and hunting them forms one of the chief amusements of the island.

The island is very much infested with rats. Domestic animals are reared with success, and the fowls form a valuable supply for the table. The Green Mountain abounds with Guinea-fowl, which afford amusement to the sportsmen during the season, from April to September. On the northern side of the mountain is the drip of water called *Dampier's Springs*, because discovered by the celebrated navigator of that name. This he did by watching a flock of goats, and observing where they went to drink. It will be remembered that Dampier's vessel, the *Roebuck*, founded near Ascension in 1701, and that the crew saved themselves on the island, where, after staying three weeks, they were taken off by an English ship. These springs are the treasures of the island.

The turtle of Ascension have already been noticed in page 37. The insect tribe are dreadfully annoying; flies are so numerous that at meal time they blacken the table-cloth; ants and mosquitoes innumerable, with scorpions, centipedes, large spiders, and crickets. The only attractive insect is the mountain butterfly.

The turtle season commences in December, and lasts till May or June. During the height of the season, from 40 to 50 are turned in a night; they are taken when they come to deposit their eggs in the sand. There are three or four bays to leeward which they most commonly frequent, and two men are placed during the season to turn them at night; they are then conveyed in carts to ponds where they are kept for provision. It is remarkable that no male turtle have ever been seen; and that the young ones, after they are hatched about four or five months, and are about the size of one's hand, crawl away, and are never seen again until they are 400 pounds weight. They are generally from 400 to 800 pounds weight when taken in the season; and are kept in two ponds. About 400 or 500 is the number generally taken. The meat is sold at two-pence per pound; but a whole turtle would cost about fifty shillings.

Amongst the articles of food, the eggs of the wide-awake furnish an important item, *ten thousand dozen* being often taken in one week during the season; they resemble plover's eggs, and though the bird is small, the egg is nearly the size of that of the common fowl. The season is irregular, about three times in two years. The indigenous birds are nine in number; the beautiful man-of-war bird, black with white breast and a stripe of white on each wing, the wings measuring 7 feet from tip to tip; two kinds of gannet, two booby tribe, the wide-awake, two petrel, and the boatswain bird, with its long feathers depending from its tail. All these are in considerable numbers, and whiten the rocks where they haunt. The man-of-war bird feeds on fish; but not being able to take its food, it watches the booby returning with a fish, pounces upon it, and carries off the fish. The fish for food here are the rock cod, the cavalha (rather coarse when large, but good eating when small), the conger eel, their best fish; the snipper or soldier (a beautiful fish, quite red and golden when first caught); and a quantity of a fish, with dark skin and beautiful bright purple streaks, abound, but are not good eating; oysters also abound, but are rather coarse, and not much eaten. They have mullet, but I have not seen it. We have turtle in various ways—soups, broth, excellent cutlets like veal, and in pies which are very good. (*Journal of the Geographical Society*, vol. V. p. 262.)

The climate of Ascension has been described on page 10. The phenomenon called the *Rollers*, on page 33.

In the month of March, 1833, the island was found to be fortified at all accessible points. A new battery was constructed, close to the landing place, to mount seven 24-pounders; and near this is a large tank containing 1,700 tons of water. Iron pipes, of 3½ inches bore, extending 33,000 feet, were laid down, reaching from the Green Mountain to the town, and brought down to it, in many places perpendicular, particularly as far as Dampier Spring.

A tunnel has been cut through a solid mass of cinder, 200 feet above the government buildings at the Green Mountain, to carry a pipe through, and to prevent the labour of horses, &c., which had previously been employed in bringing the water down from the heights to the large tanks. This tunnel is 930 feet long, and 6 feet 6 inches in height; it was cut by six men in three months, directed by Captain Payne, superintendent of the works. The stock, consisting of horses, cows, and sheep, is also raised there; the latter being brought principally from the Cape of Good Hope, and are disposed of, on government account, to any ships requiring them, at 30s. per head. There are about 4,000 acres of pasture and arable land, including the gardens, &c., on Green Mountain, in excellent order, and which produce many European, as well as tropical fruits and vegetables. Wild goats, still numerous, are hunted for the use of the hospital. Wild Guinea fowl, and also the common fowl, are numerous, and afford good sport for a bold sportsman, but not for a timid one. From the scarcity of horned cattle, and the difficulty of providing provender, fresh beef is issued but once a year; turtle, one and a quarter per man, twice a week. The island is under martial law, no settlers being allowed to reside upon it; consequently the whole labour is performed by the marines, who are allowed rations for extra services.

At the date of these remarks, March, 1833, there were provisions for the garrison for eighteen months. Want of rain was then a great drawback; the supply of water from the springs being very limited.[*]

It is a curious fact, that in later years a considerable change in the climate has been

---

[*] *Nautical Magazine*, January, 1834. By an Admiralty Order, all applicants for turtle are in future to have them, on government account, at 30s. each. Merchant ships, *in distress for supplies*, may obtain them; the only extra charge made by the government being the freight from England.

But in a letter published in the *Nautical Magazine*, March, 1839, Mr. James R. Rea says, "*that in a visit to that* island in the previous July, Captain Evans, the commandant, informed *me, that he had received* an order from England a short time previous, to the effect, that only in perceived. For months together, I have been told by several who have been resident from three to seven years, as well as by Captain Bate, not a cloud would pass over the heavens, nor a drop of water fall; but since the land on the mountain has been so much cultivated, a gradual increase of rain has taken place; seldom more than a day passes over now without a shower or mist on the mountain; and during the first ten days we were here constant little showers fell.* The mountaineers, like the Children of the Mist, inhabit a region of clouds for many months in the year, and clothe themselves in woollen garments; while the lowlanders are frequently perspiring at every pore, though clad in linen.

Remarks on the anchorage, by Captain Hunt, of the ship *Atlas*, March, 1832.

The Island of Ascension being both convenient and safe for ships homeward bound to approach, when in want of provisions, water, or repairs, and Captain Bate, with the officers of that establishment, most attentive and ready to relieve the wants of ships of any nation resorting thither, and their means to do so and to render assistance being superior to any other place between the Cape of Good Hope and ports in Europe, it is to be regretted that accidents have so frequently happened to vessels touching there, in most cases through want of knowledge as to the position of the rock and reef lying N.W. of the anchorage.

The anchorage is in Sandy Bay; a prominent rock, on which is a fort, forming its western boundary. Ships may anchor in any part of this bay, in moderate depths of water.

Commanders of ships coming from the eastern side of the island, intending to anchor or cruize off the settlement until they have gained supplies, must observe that no safe anchorage can be found to the *westward* of the fort, neither is the shore safe to approach within 1½ miles of it to the *westward*.

The best guide to clear the reef and rock lying to the N.W. of the anchorage, and on which many vessels have grounded, is to keep the houses and barracks open to the eastward of the fort, and never to shut them all in with, nor open them to, the *westward* of the fort, unless the distance from the land be at least 1½ miles. In the latter case they would be in great danger of striking on the reef above mentioned, the spit or rocks of which lie nearly a mile from the nearest point of the shore.

A buoy, painted black and white, is laid on the spit. When this buoy can be seen, a vessel should never pass to the westward of it, unless her distance from the land be at least 1½ miles. The sea does not always break upon this rock, but there is always a considerable swell passing over it.

Ships approaching Sandy Bay, from off the *western* side of the island, must be careful not to advance nearer to the land than 1½ miles, until the houses and barracks be opened to the eastward of the fort. They may then stand into Sandy Bay to their own depths, free from all danger.

By attention to the above observations it will be impossible for ships to meet with accidents; for on all other parts of the island the coast is bold [North point excepted], and may be approached to within a cable's length.

In consequence of the accidents above alluded to, Captain Bate, the commandant, in November, 1829, gave notice that a rock of 15 feet, on which a whaler had touched, and another of 12 feet, had been buoyed. The upper part of the buoys is white, and has a sheet of tin, whereon is painted the depth of water, which is visible at some distance.

At the 12 feet rock, the stairs, called *Tartar Stairs*, bear by compass S.E. ½ E. one quarter of a mile.

At the 15 feet rock the same stairs bear E.S.E., nearly half a mile.

---

cases of extreme want or distress was any provisions to be supplied to vessels calling there. Nor is water to be had in such an abundance as I was led to believe; one gallon a man per diem, allowing the passage from there to England to be forty-two days, was all that could be spared to the Trinculo. Government has fixed the price of turtle at 50s. per large and small, which you will perceive is 20s. more than the price stated in the *Nautical*, as quoted above. Thus you see that there is no inducement to shipmasters to give preference to Ascension over St. Helena." The price of the turtle, it will be seen, agrees with the statement of *Mrs. Colonel Power*, given on the preceding page.

* In November, 1834, see *Journal Geographical Society*, Vol. V. p. 250.

These rocks are only two of many that compose the reef extending from the foot of the fort along shore to S.W. Bay, and running out to seaward a large half mile from the shore, being a formation of hard pointed lava rocks, with spots of white sand.

A large coppered buoy is likewise now placed on the N.W. point of the reef, on a rock having 30 feet of water over it, with 8 fathoms outside of it. At the buoy the crane at Tartar Stairs bears by compass S.E. by E. ¾ E. seven-tenths of a mile. No ships should go within the buoy, or come nearer to the reef than 10 fathoms of water; for, during a long swell, the sea breaks on the reef from within a cable's length of the buoy the whole way to the shore.

The landing place is on the flight of steps at the extremity of a wharf; a small crane near it assists boats in approaching, and persons on landing. The beach consists of very small fragments of shells, in some places so firmly compacted together as to form slabs, which may be worked into tomb-stones, steps of doors, or broken and burned for lime.

12.—THE ISLAND OF ST. HELENA.

The longitude of the observatory at St. Helena as given in the table, 5° 42′ 30″ W., is the result of the observations of Lieutanant Johnson in 1830; these consisted of fifty-four observations of moon culminating stars compared with observations at Greenwich, Cambridge, and the Cape of Good Hope. M. Daussy, from the same observation, calculates it as 5° 42′ 51″. Captain FitzRoy places it in 5° 42′ 19″. Captain Foster, who connected James Town chronometrically with the Cape of Good Hope, places it in 5° 43′ 15″. In Lieutenant Raper's table it is stated as 5° 44′, or 1½′ W. of Lieutenant Johnson's result. Commodore Owen, from his observations in the Leven, in 1826, gave it in 5° 44′ 48″; and according to Captain Heywood it is in 5° 44′ 15″. The latitude of the observatory is 15° 55′ 26″ S.

The altitudes of the most remarkable eminences of St. Helena were ascertained, on a survey of the island, by Major Rennell.* These are, Diana's Peak, 2,692 feet above the level of the sea; Cuckold's Point, 2,672; Halley's Mount, 2,467; Flagstaff Hill, 2,272; Sandy Bay Ridge, 2,215; Longwood House, 1,762; Lot, 1,444; Lot's Wife, 1,423.

Cuckold's Point, Halley's Mount, and Diana's Peak, form part of the same ridge, and are frequently enveloped in clouds. The Alarm House, overhanging the sea, is 1,960 feet in height, and the High Knoll, centrically situated, 1,903 feet. The greatest extent of the island E.N.E. and W.S.W. is about 10 miles, by 6 in breadth. The surface contains nearly 30,000 acres of pasturage and garden grounds. The island is unquestionably of volcanic origin, as volcanic productions have been found in every part. Of its basis, the great component part is rock.

St. Helena lies within the limit, and in the strength of the south-east perennial or trade wind; and its roadstead is off *James' Town*, on the north-west or leeward side of the island. Westerly or northerly winds seldom blow with force or duration, so as to endanger the shipping in the road. The voyage from England is usually performed in nine or ten weeks. For the best routes, see pages 74—76.

HISTORY and DESCRIPTION †—The island was discovered by the Portuguese Admiral Joaö da Nova Galego, on St. Helena's Day, 1502. In 1513 it became the voluntary abode of Fernandez Lopez, a Portuguese nobleman, on returning in disgrace from

---

* Major Rennell's Survey, a beautiful drawing, never published, is, we have been informed, at the India House, London.

† In addition to the information given in our previous edition, we have availed ourselves of a translation of a graphic account of a visit to St. Helena by Captain Fokkens, of the Dutch marine, in 1849, as detailed in the invaluable *Verhandelingen en Berigten*, by the Chevaliers G. A. Tindal and J. Swart, Amsterdam, 1850.

"A Guide to St. Helena, Descriptive and Historical, with a visit to Longwood and Napoleon's Tomb," St. Helena, 1851, contains a vast amount of useful information.

"St. Helena," it is said, "is famous for an inexhaustible supply of fresh water, without a river; for an indigenous 'wire-bird,' with legs like a sandpiper; for a splendid display of prickly pears; an iron-bound coast; a ladder 600 feet high, the high road to the upper regions; a time-ball like a Dutch cheese on a May-pole; for the possession of Lot and his wife; a petrified friar; for extinct volcanoes which cannot be found; the grave of Napoleon; and for not having had a wreck on its shores time out of mind.

India; who, being left here, with a few servants and some useful animals, assiduously cultivated its resources. In a few years he was recalled to his country, and imparted the advantages of St. Helena to the East India trade. Thomas Cavendish, in his famous cruise around the globe, visited the island in 1588, and found, as he has said, "Divers handsome buildings and houses, a church tiled and whitened, very fair, a causey made up with stones, reaching into a valley by the seaside." This valley he describes as the "fairest and largest low spot in all the island, and is exceedingly sweet and pleasant, and planted in every place either with fruit or with herbs. There are fig trees which bear fruit continually, and very plentifully; for, on every tree, you may see blossoms, green figs, and ripe figs, all at once; and it is so all the year long. There is, also, a great store of lemon trees, orange trees, pomegranate trees, and date trees, which bear fruit as the fig trees do, and are planted carefully and very artificially, with pleasant walks under and between them. In every void place is planted parsley, sorrel, basil, fennel, aniseed, mustard-seed, radishes, and many very good herbs. The fresh water brook runneth through divers places of this orchard, and may be made to water any tree in the valley." The English ship Bonaventure, Captain James Lancaster, was here in 1593, having been driven back, after leaving the Cape, and remained about three weeks.

For some time after the departure of Lopez, the island does not appear to have been regularly inhabited; but, in 1640, the Dutch attempted to establish a settlement here, which they relinquished, in 1651, to the English East India Company; and to this company the entire possession and sovereignty of the island were granted by charter of Charles II., 3rd of April, 1661. At the close of 1672 the Dutch, by the treachery of one of the inhabitants, again obtained possession: but it was soon recaptured by three of the king's ships, under the command of Captain Richard Munden. The island thus relapsed by conquest to the crown, but was re-granted, by the king to the East India Company, in whom the property and sovereignty have since been vested. The second charter, dated the 16th of December, 1673, constituted the governor and company the true and absolute lords and proprietors of the island, with full legislative power, but, as near as may be, agreeably to the laws of England, and reserving also the faith and allegiance of subjects to the crown, and the rights of the natives, to all intents and purposes, as if they had been abiding and born within the realm. Since the termination of the East India Company's charter, the island has been vested in the British Government.

The island, when first descried from the northward, appears like one vast rock, or castle, surrounded by the ocean; the coasts being generally high, rugged and precipitous. On advancing, the prospect gradually improves; the mountains appear in varied hues, and then assume the verdant teint which distinguishes their summits. The rocky coasts will now present a striking contrast to the green hills and valleys of the interior. The town will next be seen, seated in a narrow valley between the mountains, with the batteries, the church, and the white houses, interspersed with trees, constituting, altogether, a picturesque and animating scene.

An elevated chain or ridge, extending nearly East and West, divides the island into two unequal parts; numerous ridges and valleys branch from it in various directions. *Diana's Peak,* the summit of the chain, towards the East, is the highest point of St. Helena. This peak commands a magnificent prospect of all the island, with its ridges and hollows to the sea, its mountains, houses, and plantations; and within the area of its horizon, the approaching and departing shipping to the distance of nearly 60 miles, if the weather be clear.

Off the S.E. end of the island are two pointed rocks standing high out of water, the outermost of which is called George Island, and the inner one the Column of Hercules. Close off the southern cape are those craggy rocks called the Needles, and a little to the northward of the western point of the land close to the shore are two more, called Bird and Egg Islands; they are all barren rocks, the largest of which is not 300 yards in circumference.

Approaching the island from the S.E., the land appears to slope gradually from the middle of it to the northward, terminating abruptly in Barn Point, 2,272 feet high. Beyond this Sugar Loaf Point is seen, the northern extreme of the island, and near which is the well known pinnacle shaped mountain called the Sugar Loaf, 1,960 feet above the sea. At the foot of this mountain are the batteries, a short distance apart from each other, called Butter-Milk Above Bank, and Beneath Bank batteries, mounted with heavy guns, about 100 and 200 feet above the sea, and, with the others, would be formidable to an enemy.

Shipmasters must be careful not to get to leeward of the road, but to make the island from the eastward, keeping Sugar Loaf Point, when rounding it, close on board.

Formerly all vessels on passing this point sent a boat to the first named battery to give the name of the ship and the object of her visit, but of late years this practice has been discontinued. On that account our seamen give it the name of "Pry Corner." About half a mile S.W. of this point is Munden Point, which forms the eastern boundary of the bay in which, at the entrance of a small valley, James Town is situated; the best anchorage off it is in from 12 to 20 fathoms. The western point of the bay is formed by a steep perpendicular hill called Ladder Hill, about 800 feet above the sea. The distance between these two points is about 3 cables' lengths. Between Pry Corner and Munden Point is Rupert Valley, where landing can be effected, but commanded by a strong battery.

View of St. Helena, from the Road.

The only LANDING PLACES are at *Rupert's* and *James'* or *Chapel Valleys.* In Rupert's Valley, towards the sea, stands a strong battery, well mounted with heavy cannon; but the valley is not habitable, because it has no water. In the entrance of James' Valley stands *James Town*, which is defined by a very fine line of 32-pounders, and flanked by a high inaccessible battery upon the rocks called Munden's, close under which all ships must pass that come to an anchor before the town.* As soon as Munden's Point is passed, James' Town appears suddenly between rocky precipices 1,000 feet high. The white buildings and church, with the green foliage of the neighbourhood, give a pleasing effect to the scene, improved by contrast with the adjacent craft. Immediately behind the water battery, and in front of the town, stands the castle, distinguished by a flagstaff, and near to it on the right is another large house called the "Times Office." In the first are the offices of the government officials, the other is the dwelling of the harbourmaster. The Times office is provided with a mast, from which at a stated time a white time-ball falls in sight of all the vessels in the roadstead, as presently described. The principal street consists of neat and well constructed houses, and divides into two others; one on the East, leading to the country in that direction; and the other to the upper part of the valley, where the barracks, the new garden, and the hospital, are situated. In the western street are a number of shops, stored with European and Indian goods; but the houses here are very inferior to those in the lower street, where the principal inhabitants reside.

The water that supplies the garrison and shipping is conveyed by leaden pipes from a spring in the valley, distant more than a mile from the sea. These pipes lead the water to the jetty, where there are two cranes for the use of boats in loading with goods or watercasks, or for receiving stores from the shipping. The water is of the purest quality, and in great plenty. In a moderate season six hogsheads are yielded every minute, and shipping may be supplied with 300 tuns every twenty-four hours.

On the right or western side the valley is entered from the interior by the steep promontory called *Ladder Hill*, 800 feet above the sea; the zig-zag road upon which, 9 feet in breadth, has a wall on the side next to the precipice, and is very easy of ascent. On the left of the valley, the carriage road, called *Side Path*, is the avenue to the interior of the island eastward. This road, which has been made with great labour and difficulty, goes with an easy ascent transversely to the level above, whence the prospect is striking and delightful: from a sterile brown and barren rock you view the most lively verdure, beautiful lawns, with sheep and cattle feeding in different places, interspersed with small houses, which have generally a large inclosure laid into gardens. This view is terminated by a prospect of the sea, or by high rocks, apparently heaped one upon another to a stupendous height. The plain called *Long Wood*, toward the eastern side of the island, contains the greatest quantity of level ground. A considerable space on it is planted with trees, but it is deficient in water. This plain, 1,762 feet high, forms another point of view. The scenery is here enlivened by a small winding stream, which, falling from the heights into the valley, makes a delightful cascade. Upon the edges of the stream water-cresses are often plentiful.

---

* *See the particular plans of St. Helena on the General Chart.*

A rich mould, from 6 to 12 inches deep, forms, over the rocks, the general soil of the country, and nourishes a great variety of plants. The clefts and inequalities produce trees of various species; and, amongst these, the tallow tree is said to be indigenous; several of the latter grow on the hills, and there is a copse of them at the S.W. part of the island. The lands are devoted chiefly to pasturage, and the gardens to culinary roots and vegetables. Utility takes precedence of taste; and although the sugar-cane, cotton tree, indigo, &c., with the most beautiful plants, have been introduced, the great purpose of rearing cattle and useful herbs has always been primarily and closely regarded. The country was found, in the first instance, covered with wood. Its peculiar productions have since given place to more useful ones. The wire-grass of India, samphire, and a wild celery, abounded here; the wire-grass is now found principally in the low lands; the English vernal grass upon the heights. The English oak has also appeared; it grows remarkably quick, but has never attained perfection. Figs, oranges, and pines, are found in the valley by the shore, and but few English fruits have failed. The apple trees are very abundant. In a valley near the S.E. part of the island, having a run of water through it, which issues from the eastern side of Diana's Peak, there is an orchard of apple trees, which flourishes in a remarkable manner, the branches being loaded to the ground with fruit; while, on the same tree, the blossom is seen, and the apple in all its different stages, from its first formation until it is ripe and falling to the ground. The soil of this orchard is a deep black loam. On one side of the valley it is 10 or 12 feet deep, sloping down with a considerable declivity, and might be rendered very valuable, if properly cultivated. The tropical fruits ripen best in the valleys near the sea; peaches, guavas, grapes, and figs, in different parts of the island. The hopes of the farmer have been frequently disappointed in the cultivation of grain; sometimes from drought; at others, from the depredation of rats, which have at times been so numerous as to destroy entire crops. Potatoes, yams, cabbages, peas, beans, &c., are generally plentiful.

The potatoe is the principal article of agricultural produce, and those grown on the island are good and much esteemed. In favourable seasons 6,000 bushels are sold annually, at 8s. per bushel, equivalent to £2,400. There are three crops annually, but the joint produce of the whole is not more than *one* in England; and in scarce seasons they have been sold as high as 35s. and 40s. per bushel. In 1819 (at which time of year European and tropical fruits are scarce, after February they become plentiful) other provisions were sold as follow:—Beef, veal, and pork, 7d. to 10d. per lb.; turkeys, each, 25s.; milk, per bottle, 6d.; eggs, per dozen, 2s. to 2s. 6d.; white cabbage, each, 6d. to 7d.; turnips, per bunch, 6d.; onions, dry, 6d. per lb.; pears, per hundred, 8d.; tea, per lb., 2s.; moist sugar, 3d.; rice, very cheap; bread, very dear and bad. Horse-hire, 15s. per day; boat hire to the shipping, 2s. 3d.

The various coins of the world are current here, at the following rate of exchange:—Dollar, 4s. 4d.; doubloons, £3 6s.; Bengal mohurs, £1 13s. 3d.; Louis d'ors and Napoleons, 15s. 7d.; French crowns, 4s.; Dutch guilders, 1s. 6d. English sovereigns generally command a premium, being in demand for homeward bound ships.

The sheep and beasts are, in no respect, degenerated by change of climate. In some situations rabbits abound; pheasants and partridges are numerous, and the gardens are enlivened by the notes of the Canary bird. Fish, to the extent of 70 species, have been found on the coast; among these mackarel is peculiarly abundant, but some are very unwholesome. The shell fish include turtle, oysters, and two species of lobster. Sea fowl deposit immense quantities of eggs around the island, which are collected in the fall of the year, and constitute an agreeable article of food.

[illegible] are found, but little need be said. The [illegible] and the summer not so hot as in England. The [illegible] ranging between 55° and 56°, a temperature in which [illegible] more equality, perhaps, than any other. Thunder [illegible] atmosphere, lightning is not unfrequently seen. [illegible] drought, wherein the cattle have perished from want of water; [illegible] experienced in all seasons, particularly in July, August, and [illegible] months of the northern hemisphere. Sir Joseph Banks has [illegible] its share: there are more rainy days in February, however, [illegible] and cloudy days throughout the year exceed in number, almost [illegible] the rays of the sun fall upon the earth without interruption, [illegible] vegetation."

[illegible] ship or fleet remains in the roads, the passengers are entertained as [illegible] houses, but at a very expensive rate; for which a good table, with [illegible] lodgings, are generally provided. The expense is to be accounted [illegible] consideration that St. Helena neither yields sufficient food for its population, [illegible] whole island produce a single article of commerce to exchange for foreign [illegible] of which it is much in need. All the luxuries, and most of the necessaries [illegible] imported; fuel is both scarce and dear, all the coals being imported from England.

Appearance of St. Helena, bearing W. 7 leagues distant, as taken by Captain Charles Lesky.

The population of St. Helena, as returned to the Government, in 1847, was 5,298 persons.

The general character of St. Helena is neither that of fertility nor beauty; the few verdant places in it derive a brighter appearance from the gloom and nakedness that prevail around them. The whole island consists of one parish, but contains two churches, one of which, as before noticed, is in James Town, and the other in the country. The town presents nothing of importance; but small as it is, it possesses a good market place, which is well attended every morning; and it boasts of a brewery, an unusual thing in so warm a climate.

On the ridge above Ladder Hill is the *Observatory*, established by the East India Company, under the superintendence of Captain Johnson, of the St. Helena artillery; but it was discontinued at the commencement of the present government of the island.

The practice of discharging rockets for rating the chronometers of vessels touching here has also been discontinued, and a time-ball has been substituted: this ball was originally hoisted at the Observatory, as shown in the margin; but as the Observatory is no longer in use, the ball has been removed from the hill to the town, and is in charge of the master-attendant, whose attention to it is unremitting.

Observatory, on which the time ball was formerly exhibited.

The ball drops at mean noon, St. Helena time, for the benefit of the inhabitants, and at 1^h p.m. for the advantage of the shipping. The ball is hoisted half-mast high, five minutes before the time, and at one minute before to the mast-head.

The official notice, dated St. Helena, 21st of January, 1834, states that,

To prevent mistakes, a *white ball*, hoisted upon a staff, will denote the time as follows: the ball *will be hoisted half-mast* at *five* minutes, and close up at *two* minutes before *twelve o'clock*.

At the instant of the *mean time*, at noon, of St. Helena, the ball will drop from the top of the staff, when the gun will be fired at High Knoll.

The signal will be repeated at 1^h, at the instant of *Greenwich mean time*, for the benefit of the shipping.

A ship wishing to correct her chronometers, and arriving after 1^h p.m., and not likely to remain the twenty-four hours, may hoist the *Blue Peter* at the main-top gallant mast-head, when the same method will be adopted at the next ensuing hour after the signal. Foreign ships to substitute their ensign for the *Blue Peter*.

Should there be any uncertainty, and the ship wishes to have the signal repeated, she will dip the flag, and rehoist it on observing the ball half mast. The ball will again drop at the ensuing quarter of the last hour.

Ships concealed from a view of the signal station will attend to the repeating ball at Ladder Hill, and in neither case is any allowance to be made for loss of time, since the astronomer will make the calculation of the few tenths required.

Captain FitzRoy, in his chronometric expedition, described hereafter, made the situation of a spot close to high water mark on the meridian of the Observatory, lat. 15° 55′ 15″, lon. 5° 42′ 45″.

For a full description, with plans of the time ball and machinery, see the *Nautical Magazine*, November, 1835, page 658.

The objects of interest at St. Helena are Plantation House, the residence of the governor; Sandy Ridge; and Napoleon's grave. The last is about 4 miles from James Town, and the route to it affords the best opportunity of seeing the finest scenery of the island, as it is in the direct route to Diana's Ridge and to Longwood. It lies in a valley, having a little fount of water, moss-grown and beset with brake and fern. The valley is adorned with wild flowers, among which the roses and geraniums bloom throughout the year, and mingle their delicious perfume. This was Napoleons's favourite resort, and here his remains were deposited.

Napoleon Bonaparte, "who bestrode the majestic world like a colossus," arrived at St. Helena, an exile prisoner, on the 13th October, 1815, and on May 5th, 1821, he died at Longwood, a villa 6 miles from James Town, in the sixth year of his exile, and the fifty-second of his age. On the 4th the island was swept by a most tremendous storm, which tore up all the trees by the roots. About six in the evening, Napoleon having pronounced "*Tête d'Armée*," passed for ever from the dreams of battle. He was buried, as above stated, and his grave was for nineteen years the principal object of interest in this, his island tomb. On May 5th, 1840, the anniversary of his death, his body was formally demanded of the British government, and on October 15th, 1840, it was removed from its resting place, and conveyed to the Hotel of the Invalides, in Paris. The circumstances connected with this are still fresh in the memory of our readers.

HARBOUR REGULATIONS.

Art. 1. The commanders of all vessels are obliged to make over to the collector a manifest of freights for St. Helena, besides a list of passengers and luggage, the goods coming from Great Britain and Ireland to be opened in the entrepôt, and also to give notice before they unload. A penalty of £100 is inflicted in neglect of it.

Art. 2. No boat or other vessel, except the pratique boat, shall be allowed alongside a ship newly arrived before a communication has been allowed by the medical inspector, and which will be made known by hoisting a white flag on the main-top-gallant mast-head.

Art. 3. Every ship displaying a yellow flag at the fore-top is in quarantine.

Art. 4. Every commander of a ship must give twenty-four hours' notice to the Secretary of Colonies before his departure, but if he wishes to leave again within the twenty-four hours after arrival, immediate notice must be given; neither may he take any persons whatever off the island without the knowledge of his Excellency the Governor, or Colonial Secretary.

Art. 5. No boat is permitted to make fast to the buoy or buoy rope, neither to the crane nor to the waterman's place while any other boat is unloading, loading, or letting in water. Neither shall any boat so loading or unloading be allowed to remain over a reasonable time.

Art. 6. No boat shall be allowed to remain at the steps of the landing place taking in passengers' baggage longer than necessary.

Art. 7. No boat shall be allowed to remain fast to the steps longer than absolutely necessary, but remain a short distance off in order not to prevent other boats from landing.

Art. 8. No gunpowder is allowed to be landed without four hours' notice being given to the Officer of Artillery or Harbourmaster.

Art. 9. No boat whatever may land any person or luggage from any ship, except H.B.M. ships, on any other part of the island than James Town without having special leave.

Art. 10. Every person visiting a vessel on board of which there is an infectious disease, must remain on board until such disease has left, or go with the ship to such place as the Governor may think fit.

Art. 11. No fish may be landed at the innermost steps, nor any offal left behind at the landing place, neither is any bathing allowed in the harbour, nor bones of large fish or carrion to be thrown into the sea within a quarter mile of the shore.

Art. 12. Boat hire :—

	£	s.	d.
For one person to or from on board	**0**	**1**	**0**
" more than one, each	**0**	**0**	**6**
" every package under 25lb. (English)	**0**	**1**	**0**
" every package above 25lb., and under 100lbs.	**0**	**1**	**0**
" every additional 100lb.	**0**	**0**	**6**

Art. 13. Licensed boats must not refuse between sunrise and sunset to take any one on board a vessel at anchor, neither refuse to wait alongside when requested.

Art. 14. All vessels in quarantine must be moored on the West side of the harbour, under the surveillance of the harbourmaster.

Art. 15. Commanders of vessels who come for water must send in a written request signed by themselves, to the office of the harbourmaster, specifying the quantity required. The Time ball at James Town falls at 12^h, as at the island, or 1^h of Greenwich, 15° 55′ 25″ South lat., 5° 42′ 30″ West lon., or 22m. 50s. in time. For the information of commanders and passengers, it may be observed that the gates of the town are closed, and the bridges drawn up at the firing of the evening gun, and remain so until the morning gun fire. Those who wish to return on board must leave the town before this takes place.*

DIRECTIONS, &c.—The best routes from Europe to St. Helena have been described in page 76.

As *James Town* is situated in the most leeward part of the island, ships, in coming in, are obliged to keep close under the land, by which means their decks are entirely exposed to the battery above. Another disadvantage is that of eddy winds, calms, and violent gusts, which lay them almost on their broadsides; so that the natural strength of St. Helena is almost sufficient for her safety.

A ship bound to this island must run down along the North side of it, within a cable's length of Sugar Loaf Point, and afterwards keep the shore close on board; and likewise within a cable's length: there is no danger, as it is bold and steep-to. On the West part of Sugar Loaf Point stands a small fort; and a little to the southward of it is Rupert's Valley; the next point, to the southward of the valley, is Munden Point, which, like all the rest, must be kept close on board; you then come to James Valley, off which is the place of anchoring.

You may anchor in from 8 to 15 fathoms; the flagstaff at the port bearing from S.S.E. to S.E. by S.; Sugar Loaf Point N.E. by E.; and Horse Pasture Point S. by W. ½ W., distance offshore about half a mile; with these bearings you have a good and convenient berth for watering. This bank runs out to the westward, off the fort, about 1½ miles, and deepens gradually from 7 fathoms near the shore to 30 and 35 for about 1¼ miles, when it deepens suddenly to 60 fathoms, and then no soundings. The bottom in the road is coarse sand and gravel. You will find no soundings until you come abreast of Rupert's Valley, where there are 18 to 20 fathoms.

One watering place is just without James' Fort, where there is a crane for striking the casks into the boats; the other is at Lemon Valley, where there is the best water, and you may fill the casks in your boats with a hose.

Although the anchorage is well sheltered and easy of access, the surf is at times so high that no boats can land for several days together. These surfs are most prevalent in the months of January and February, and many lives have been lost in consequence of boats being upset by them. During this time the weather is fine, the wind light, and no *obvious* cause to produce so extraordinary a phenomenon as these surfs present. The spray commonly rises to the height of 50 or 60 feet, produced by a wave from the sea, which at the time appears to be in a perfectly quiescent state.

---

* **Nautical Magazine, 1852, pp. 19, 20.**

Barn Ledge, on the N.E. side of the island, represented in the particular plan on the Chart, is from one-half to three-quarters of a mile from Barn Point. It is about 1½ cables in circuit, has generally a heavy ground-swell upon it, with from 12 to 6 fathoms, and several pointed rocks of 25, 21, and 20 feet. From the Ledge, Barn Point bears N.W. ½ N. about three-quarters of a mile; Turk's Cap in one with Turk's Cap Battery, about three-quarters of a mile. Large ships coming from the S.E. should keep George's Island open with Saddle Point until Sugar Loaf Point is open with Barn Point. This leads clear of the Barn Ledge, between which and the shore are 24 and 20 fathoms, in a channel more than a quarter of a mile wide. Close to the Ledge, on the outside, are 32 and 34 fathoms.

There is also a ledge off the South Point of St. Helena, at rather more than a mile. This is the *Speery Ledge*, a reef, 2 cables' length in circuit, with depths of 16 to 10 fathoms, and pointed rocks of 24 to 18 feet. A heavy ground swell is frequently on it. From the Ledge, Speery Rock bears N. by E. ¼ E.; the North Black Rock, N. by E. ½ E. nearly touching Speery Rock; the S.W. or Man and Horse Point, about N.N.W.; Long Range Point, E. by N. ¾ N.

To avoid the Speery Ledge, if sailing along the south-east side of the island to the westward, keep the Shore Rock open with Long Range Point till the northernmost of the Black Rocks open to the westward of Speery Rock; then you may haul up for the S.W. point of the island. About a mile W. by N. of Speery Ledge is a patch of 10 fathoms, rocky bottom, between Speery Rock and the Ledge are 24, 26, and 35 fathoms, and the bank of soundings extends 2 miles without the Ledge, in a South and S.S.W. direction, with 50 and 58 fathoms, fine sand, on its outer border.

For a description of the *Rollers*, see page 33.

While H.M.S. *Chanticleer* was here, her chain cables, on being taken up, were found to be covered with clusters of barnacles, which appeared, in some degree, to produce a coralline structure. The buoys were also covered with them, the young being attached to the shells of the parents. The hempen cable was beset by them in every strand, the ulva being 5 or 6 inches long, and the difficulty of detaching them was far greater than in the iron cable, the weights of the links in this breaking them very easily. This is, says Mr. Webster, no trifling advantage in hot climates, where the cables are much used. It is also an important consideration in regard to health, for the effluvia, or rather malaria, proceeding from a wet hempen cable must be pernicious.

13.—BANK OF ANTONIO VIANA.

The only notice that we possess of the shoal bearing this name is the following, from the Old Sailing Directions for the Coast of Africa. "Between the seventeenth and eighteenth degrees of latitude, 70 or 80 leagues W.S.W. from Cape Negro (according to *Pimentel*), are the shoal and breakers of *Antonio Casado de Viana;* these are very dangerous to ships coming from Brasil to Benguela and Angola; one of the rocks only appearing above water. The shoal is very steep, and cannot be discerned in the day-time till you are near, on account of the prodigious foaming of the sea, whose roaring, being heard at a great distance, may during the night give you notice of the danger."

14.—SAXEMBURG ISLAND?

An island, by him named *Saxemburg*, is said to have been first seen by J. Lindeman, of Monnikendam, 23rd of August, 1670, who has given a view of it, as taken at *sunset of that day*, when bearing N.E. by N., distant about 7 leagues. He represents it as having a remarkable narrow peak, like a column, near the middle of the island; and, from his account, it was laid down in the charts at about 30° 45′ S. and 19½° W. Captain Galloway, in the American ship Fanny, outward bound to China, in 1804, supposed that he saw it *at a great distance*. He states that it was four hours in sight, from the mast-head, without changing its appearance, which exhibited a peaked hill in the centre, and a bluff at one of the extremities, situated in the parallel above mentioned, but *two degrees more to the eastward.*

It was again supposed to have been seen by Captain J. O. Head, in the ship True

Briton, on a voyage to Calcutta, 9th March, 1816. The log-book states that, "At 8ʰ a.m. fresh breezes at N. by W. and *dark cloudy weather;* saw what had every appearance of an island, bearing E.S.E. distant about 20 miles, forming a high pinnacle at the southern extremity, and gradually decreasing in height to the North end. At 10ʰ a.m. squally weather, the land having still the same appearance, as the clouds cleared away at intervals. At noon, latitude by observation 30° 42′ S., longitude 21° 40′ W., by mean of three chronometers, the centre of the island bearing E.N.E. ½ E., by compass 24 miles. At 2ʰ p.m. cloudy weather with rain, lost sight of the land, which we supposed to be Saxemburg Island, laid down by Mr. Horsburgh as *doubtful.*"

Captain Flinders, in the year 1801, unsuccessfully sought for this island, in the parallel assigned. From longitude 26°, he proceeded eastward to 20° 28′, and then E.S.E. nearly over the situation described in the charts. His precautions were such as seemed to leave no doubt of the non-existence of the island within the limits here mentioned. Captain Horsburgh also states that he had, at two different times, endeavoured to gain a sight of this doubtful island, by crossing the longitude 19° W., at one time, a few miles to the southward of its latitude in the charts, and at another time a little more northerly than the same. This gentleman is of opinion that, if an island, moderately elevated, had any existence near the place assigned to Saxemburg, it certainly would have been frequently seen; and he adds that clouds, exactly like land, sometimes remain stationary at the horizon, for a great length of time, in this part of the ocean, and may be mistaken for distant islands.

On the 17th of January, 1821, the ship *Cornwallis*, Captain Rowland Bourke, passed over the assigned position of Saxemburg, and ascertained that no island could exist in that situation; a good look-out being kept.

The account of an island said to have been seen by the *Columbus*, Long, master, in 1809, lat. 30° 18′ S., lon. 28° 20′, is now given up as unfounded. In the month of August, 1823, after sighting the Isle of Trinidad and Rocks of Martin Vas, it was sought for by Captain John Jaffray, in lat. 30° 20′, lon. 31°. Here he arrived in five days, assisted by an excellent chronometer and frequent lunar observations. The weather was very fine and clear, the winds light and westerly. Captain Jaffray run to the eastward in 30° 20′, with daylight only, always lying-to for the night, and continued thus for three days, with similar fine clear weather. He then observed at noon, in lat. 30° 24′, lon. 25° 50′, at which time he could have seen any moderately elevated land at nearly a degree to the eastward. The conclusion is, that there is *no land in that situation*, and that Mr. Long, in the Columbus, was deceived by one of those stationary clouds which are so frequent in these parallels.

Captain Jaffray continued cruising to the southward till he arrived in lat. 43° 10′ S., lon. 30° W., where, finding himself rather too early for the southern islands, he cruized for some days in search of the *Isla Grande*, said or supposed to lie thereabout. Here, in the first two days, he saw three whaling ships, on the look-out for fish. Of these, one was the *Fair Helen*, of Sagg Harbour, America; the captain of which laughed at the idea of looking for land thereabout; and indeed the existence of such an island in this situation seems to be more than doubtful, as we shall show hereafter.

With the information on this island, or *imaginary island*, the following, by Captain Monteath, may be incorporated:—"On my passage from Trinidad Island to the Cape of Good Hope in April, 1818, I crossed the parallel of latitude assigned to Saxemburg Island, on the meridian of 20° 30′ W.; and, as the wind was southerly, continued steering on the parallel of 31° S., until on the meridian of 16° 30′ W., without seeing any appearance of, or objects supposed to indicate, the vicinity of land; and I am of opinion, if an island so high as Saxemburg is represented to be did exist between the meridians of 20° to 16° W., and the parallel of latitude assigned in the tables, that it would have been seen by us, as the weather was clear, and a good look-out kept for it."—*J. W. Monteath.*

15.—GRANT'S BREAKERS.

Captain Grant, in the account of his voyage to New South Wales, in 1800 and 1801, has observed that 32 miles S.E. ½ S. by compass of latitude 21° 13′ S., and longitude, per *account*, 11° 48′ W., he discovered some high and dangerous breakers, which he supposes to be the same seen by Captain Smith, in the ship *Comte de Molke*, in 1760, as *represented* on the charts in lat. 31° 0′ S., lon. 21° 45′ W. We quote this as an object worthy of future investigation.

16.—ISLES OF TRISTAN DA CUNHA.

These isles are three in number, forming a triangle, of which the largest isle, *Tristan*, is the N.E. point. The other two isles were named by the French, in 1767; the westernmost, *Inaccessible Island*, and the smallest, or southernmost, *Nightingale Island*. The group appears to have been discovered by the Portuguese in their earlier navigations, and was farther explored and described by the Dutch in 1643, and by the French in 1767.

At present it is the domain of an interesting community of English people, whose manners, simplicity, and excellence of character remind us strongly of the somewhat similarly placed family upon Pitcairn Island in the Pacific, the retreat of the mutineers of the Bounty. As we are able to trace, from successive visitors, the progress of these isolated people, we give such extracts here as may cause the passing mariner to view with great interest these children of nature.

The situation of these islands is important to our outward bound Indiamen, and its correct position, which we now give, will afford an excellent means of rating chronometers.

According to Captain H. M. Denham of H.M.S. *Herald*, who touched here on his route to the Pacific, in November, 1852, as presently related, the N.W. extremity, which is near the settlement, lies in lat. 37° 24′ 8″ S., lon. 12° 18′ 39″ W.*

M. D'Etchevery gives the following account of the French exploration: "September the 9th, 1767, at 5^h a.m., I made the three islands of *Tristan da Cunha*, bearing East and E. by N., distant about 10 or 12 leagues; the wind then westerly, I steered East to examine the middle island [*Inaccessible*], which is the westernmost; and being at noon abreast the N.E. point, I sounded at a mile from the shore, with the middle of the island bearing West, where I found 20 fathoms, black sand, and some reddish stones. This island is high, flat at top, and may be seen 15 or 16 leagues off: it is about 2 leagues in circuit, and appears barren, steep, and inaccessible; some scattered shrubs only are to be seen on it; I perceived no danger near it, but a rock, like a boat under sail, is visible at the S.E. point.

"I stood on, leaving this island, to examine the smallest, which is 3 leagues to the S.E. It has, on the N.E. point, two islets, separated from it about 50 paces, and which have the appearance of an old ruined fort; I passed along at pistol-shot distance; continuing to steer along the island, I found ground at 30 fathoms; and, when its middle bore W.S.W., I anchored in 33 fathoms, coarse brown and reddish sand.

"The night threatened bad weather. I postponed sending the boat ashore till morning: according to the report made to me, it is so full of seaweeds twined together, that there is much trouble in approaching the barren rock which forms this island. The reeds, with which it is covered, did not let them penetrate the island, besides the great number of penguins, whose eggs are so close together that the men could not walk without breaking them: these difficulties, and the want of fresh water, which they searched for in vain, induced them to return on board. They saw plenty of fish on the coast, and many were caught.

"*September* 10. Weighed anchor in the morning, and steered toward Tristan da Cunha, the largest of the three islands, which lies about 5 leagues to the N.N.E., *true*, of the little one. It is about 5 leagues in circumference, and so high that it may be seen 25 leagues off. The peak in the middle of it is covered with snow, and the land thence, down to the sea, covered with bushes. In coasting near the land, after doubling the N.W. point, I descried a cascade, which falls into a little bay; I sent the boat to sound this part; 18 fathoms were found close to land, and 30 at a quarter of a league from shore. We anchored in the latter, grey sand mixed with small pebbles.

"The boat which went on shore found no difficulty in approaching it, but from the entangled seaweed, which bars all the coast. A cask of fresh water was brought on board, which had been easily obtained; but they could not land, excepting to the left of the cascade, on a beach of round pebbles, about the size of an egg. To the right of the cascade are rocks, on which the sea breaks heavily. The shore was covered with seals and sea lions; plenty of fish was caught, particularly of a species of cod."

---

* It has formerly been placed from 10′ to 37′ farther eastward, as stated in the notes to the Tables of Positions.

An approach to the islands may be generally known by the floating seaweeds, seen on the water, which are sometimes met with far out at sea.

The ships *Lion* and *Hindoostan*, with the British Embassy for China, touched at these islands in 1792. From the history of the voyage we have the following particulars. These ships took a southerly course, from Rio Janeiro, until they arrived in the thirty-seventh degree of South latitude, where the prevailing winds are chiefly westerly. In this track tempestuous weather is frequent, and the squalls sudden and violent. The navigation was continued in this parallel for some days, with a desirable breeze from the westward; and, on the 31st of December, the isles of Tristan da Cunha were descried.

INACCESSIBLE ISLAND presents a high bluff, of forbidding appearance, which may be seen at the distance of 12 or 14 leagues. NIGHTINGALE ISLAND, irregular, with a hollow in the middle, and a small rocky islet at its southern extremity, is descried at the distance of 7 or 8 leagues.

" The *Blenden Hall*, Captain Greig, from London to Bombay, was totally lost on Inaccessible Island, on the 23rd of July, 1821. The commander, officers, and passengers, got safe on shore, but eight of the crew perished. They remained on the island, exposed to cold and rain, until the 8th of November, on which day the carpenter and three or four of the crew embarked in a small punt, made out of the wreck with surgical instruments which were thrown ashore, and reached Tristan da Cunha, where they procured two whale boats, and brought those that remained on Inaccessible Island away. On the 9th of January a brig from Brasil put into Tristan da Cunha for water, and took them all away, and on the 18th of January they arrived safe at the Cape. During the time they were on the island, they had no food but penguins and their eggs. Out of some bales of cloth washed on shore, they made tents; an iron buoy, sawed in two, was their only cooking utensil. They were for four days exposed to heavy rains and intense cold, before they could procure fire. The ladies and passengers suffered severely, nothing being saved but the clothes they wore, the ship going to pieces two hours after she struck."

A further account states that the Blenden Hall sailed from Gravesend on the 7th of May, and was lost on the day above mentioned, 23rd July. It appears that the weather had been very thick; on the 22nd they had an observation, and found themselves near these islands, of which they wished to get a sight in order to correct their reckoning. Consequently every look-out was kept for seaweed, which is known to be an indication of nearing them: an altitude of the sun was taken at 8^h in the morning of the 23rd, and, about 10^h, everybody being on deck, seaweed was discovered, and it was soon found that the ship was surrounded by it; the helm was put down; but, by reason of light winds and a heavy swell, the ship did not come round. Breakers were now heard ahead; the jolly boat was now lowered with a tow line, but with no effect, the wind having quite subsided and the swell driving the ship on the rocks. An anchor was let go, but the extreme depth of the water did not allow it to take hold; the cutter was then lowered down to assist the jolly boat in towing the ship's head round, when she struck. The weather was now so thick, from a mist or cloud, that the two boats could not be seen, though close alongside, nor could the land be discovered. The masts were then cut away: the fog blowing off, terrific cliffs were discerned over their heads, at about half a cable's length, and the sea began to make a clear breach over the ship. The two boats now landed about 200 yards off; and while those on board were endeavouring to throw overboard the long boat, the ship filled and went to pieces. The crew clung to the forecastle, some of the beams of which held fast to the rock; and, on a hastily made raft, eight men got on shore, and one was drowned. A rope was now flung from the shore to the remainder, and at about 4^h p.m. all were landed without the least water or a morsel of provisions. Water was, however, found, and provisions were supplied by knocking down penguins, collecting eggs, sea elephants, and seals. Tents were erected with some of the coarse cloth and sails that were washed on shore; but it was four days before they could make a fire, in which they at last succeeded by means of a rocket which was washed on shore. On the 19th of October a boat was built, in which eight of the crew endeavoured to make Tristan da Cunha; but they have not since been heard of. On the 8th of November a second boat was made, and ten of the crew succeeded in getting to that island; and, with the assistance of two whale boats, the whole of the unfortunates were transported from their desolate situation by the 9th of January following, having been without bread for nearly six months. The brig *Narina*, of London, Lackland, master, kindly took the crew and passengers thence to the Cape of Good Hope, consisting of four ladies, three children, twenty passengers, and eleven seamen. Two seamen were drowned on the wreck, and eight are missing in the first boat that was built. Though this island is within sight of Tristan da Cunha, and every signal was made by means of fires, smoke, and flags, yet no assistance was rendered until the second boat made known their situation. This island is about 9 miles round, is well wooded, and remarkably high; so much so, that it is a day's work to attain the summit, but is constantly enveloped in clouds and visited with squalls; has no harbour nor cove, and can be landed on to leeward only: a heavy swell constantly prevails, which prevented these sufferers from obtaining fish as a change in their diet. The unfortunate ship was of 400 tons burden, and had 52 persons on board, mostly passengers bound to Bombay.—*Hampshire Telegraph.*

TRISTAN.—This island is discoverable at the distance of 25 leagues.* Toward the northern part there is an elevation 1,000 feet perpendicular from the sea; then commences a level or table land, extending to the centre of the island; and above that rises a conical mountain, not very dissimilar to the Peak of Teneriffe, as seen from the bay of Santa Cruz. Having previously examined the shore, and taken soundings in boats, the *Lion* stood in, and anchored in the evening, on the North side, in 30 fathoms of water. When the ship was at anchor, she was overshadowed by the dark mass of that portion of the island, whose sides seems to rise like a moss-grown wall immediately from the ocean. Here a sudden gust of wind started the anchor, and the ship for safety put to sea. The sword fish, whales of every species, sea lions and seals, penguins and albatrosses, appeared to frequent the coast.

To the log book and notes of Captain John Patten, of the ship *Industry*, from Philadelphia, we are indebted for the following information. Captain Patten was a temporary inhabitant of the largest of the three islands, where he remained with part of his crew, collecting seal skins, from August, 1790, to April, 1791. He says, "They all consist of very high land, with clear open passages between them. Their shores are, in general, bold, and are exempt from shoals or other dangers to navigation, except a high reef of rocks, or rocky islets, off the South end of *Inaccessible*, the smallest island.

"*The current sets to the N.E.* There is a regular tide, the water rising from 8 to 10 feet. While Captain Patten was there, the prevailing winds were from the northward and westward; the easterly and southerly winds blowing but seldom, and scarcely ever longer than twenty-four hours at a time. It generally blows fresh, and frequently very hard, from the N.W.; and when a gale came on, it was generally preceded by a very heavy sea, rolling in sometimes twelve, and sometimes twenty-four hours before the wind rose. The weather is very subject to be thick and hazy, attended with much rain. The summer months are warm, but the cold in winter is very severe.

"There is a bay on the N.W. side of the large island, which, however, is open and exposed. It has a fine beach of black sand where the boat was hauled up. There are two falls of excellent water, affording an abundant supply, sufficient for the wants of a large fleet; and from one of these cascades the water casks might be filled by means of a long hose, without moving them from the boats. The Industry's people pitched their tents at this bay. Around it is plenty of wood. The trees do not grow high, but their branches bend down, and spread on the ground. The foliage of the trees that principally abound resembles that of the yew tree, but the wood is like that of the maple, and burns remarkably well; the trunks are about 10 feet in height, and about 9 inches in diameter. There are no large or tall trees to be met with. A great deal of drift wood is found on the East side of the island, but none to the westward. Abundance of wild celery, sour dock (sorrel), and wild parsley, is met with. The rocks yield great quantities of the sea-weed called laver, and the shore is covered with a broad seaweed, several fathoms long (*fucus giganteus*). No quadrupeds were met with, except some goats, left there by former navigators, and which were very wild. Seven of them were shot. Neither vermin nor venomous creatures of any description were observed. Of birds, the principal were a kind of gannets, like wild geese, which the sailors considered as excellent food; penguins, albatrosses, Cape cocks and hens, and a bird like a partridge, but of a black colour, which cannot fly, is easily run down, and is very well flavoured; and a variety of small birds, that frequent the bushes and underwood. Abundance of birds' eggs are to be obtained in the proper season.

"There are large quantities of fish, particularly a kind of large perch, some weighing six pounds; file fish, in large scoles, craw fish, star fish, and others. They had no nets, and therefore did not catch much fish. What they caught was with hook and line, and the craw fish were thrown up by gales of wind. No other shell fish were found. The shore is covered with seals, sea lions, and sea elephants (the tongues of which are reckoned good eating), and whales abound in the offing, particularly *killers*. Most of the whales observed in these latitudes were cow fish, or females.

---

* An appearance of the island is given on the General Chart.

"In the seven months that Captain Patten was on shore at Tristan da Cunha he obtained 5,600 seal skins, and could, he says, have loaded a large ship with oil in three weeks. Both the sea elephants and the sea lions, as well as the seals, afford large quantities of oil; but, as their business was to collect skins for the China market, they killed such seals only as suited their purposes. September he reckoned to be the best month for making oil at these islands.

"The middle of the large island rises in the shape of a sugar loaf, and is very much elevated. Trees grow halfway up, but, higher up, the mountain consists of bare and rugged rocks, frequently hidden by the clouds, and the summit is covered with snow during the greatest part of the year. No snow, however, was observed to fall on the coast. There is a considerable extent of level land between the foot of the mountain and the shore, the soil of which is a fine rich loam, of a red colour, and considerable depth, apparently adapted to the production of every kind of vegetable; and, excepting the danger of devastation from high winds, adequate to any cultivation.

"The productions of the other islands are nearly the same as those of the large one. They afford no safe anchorage.

"Captain Patten saw the remains of different wrecks at Tristan da Cunha, such as the bowsprit and mast of a cutter, several spars, some of which were worm-eaten; some iron hoops, and other pieces of iron; but he did not perceive the marks or traces of any huts or habitations.

"Captain Colquhoun, of the American brig *Betsy*, touched at Tristan, and planted potatoes, onions, and a variety of seeds there."

Captain Heywood was at Tristan on the 5th and 6th of January, 1811, and found the variation, close to the island, 9° 20′ W. The height of its summit was found to be about 8,326 feet above the level of the sea. Three Americans were there, who proposed to remain for a few years, in order to prepare seal skins and oil, for sale to vessels that might touch there. The interior appeared to abound with goats and wild hogs; and to be formed, like St. Helena, of abrupt hilly ridges, with chasms or deep valleys between them, probably of volcanic origin.

On the 4th of February in the same year, Jonathan Lambert, one of the Americans above mentioned, by a curious and singular edict, declared himself sovereign proprietor of these islands. In a short time he cleared about 50 acres of land, and planted various kinds of seed, some of which, as well as the coffee tree and sugar cane, were furnished by the American minister at Rio Janeiro. The seed sprung up, appeared very promising, and the general aspect was that of a valuable and important settlement. The whole was, however, abandoned, and formal possession afterwards taken, in the name of the British Government, by a detachment from the Cape of Good Hope.

An official notice, 30th March, 1817, announced the occupation of the islands by a force from the Cape; stating further, that "there is a good convenience for watering at the principal island."

The island was, however, again evacuated; but, lastly, several families voluntarily went to it, after it was given up as an establishment, entirely independent of control from government; and in the London papers of April, 1824, there appeared the following statement. "The island of Tristan da Cunha has now upon it, living in great happiness, twenty-two men and three women. The *Berwick*, Captain Jeffery, from London to Van Diemen's Land, sent her boat ashore on the 25th of March, 1823. The sailors were surprised at finding an Englishman, of the name of Glass, formerly a corporal in the artillery, and the rest of the above-mentioned population. Glass gave so favourable an account of the island, which is only 9 miles in diameter, that it may be of importance to vessels, on their passage to Van Diemen's Land, to touch there: they will be sure of a most favourable reception. There are on the island plenty of pigs, goats, potatoes, cabbages, &c.; abundance of fish and excellent water. This little colony had, at the time, *upwards of 80 tons of potatoes* to dispose of. The island is very fertile, in fact, in everything desirable to settlers; and Glass declared that, if they had but a few women more, the place would be an earthly paradise. He is governor, by appointment of the rest, on account of his military character; and he trades in a small schooner to the Cape of Good Hope with the oil of the sea elephant, and the skins of the seal, which they catch in great abundance. The crew of the Berwick saw the mountain at the distance of 50 miles off.

Captain Benj. Morrell, in the United States ship *Antarctic*, touched at Tristan da Cunha in November, 1829. At this time the Captain says, "There were seven families, living very comfortably under the administration of Governor Glass, having for sale plenty of bullocks, cows, sheep, hogs, goats, rabbits, and poultry; also potatoes, cabbages, beets, parsnips, carrots, onions, and pumpkins; together with butter, cheese, eggs, and milk; all of which can be had at short notice, on moderate terms, and in any quantities. The inhabitants were very friendly, accommodating, and hospitable, and expressed their sympathy not so much in words as in actions. They pressed upon me many palatable dainties. I hope to call and see them again."

In the *Nautical Magazine* of June, 1836, is a communication from Captain *Jas. Liddell*, dated ship *Wellington*, on her way to Madras, 2nd December, 1835; and from this the following are extracts:—

"In my outward passage, being driven by a succession of south-east winds far to the south-west, I was gratified by the opportunity offered of renewing my acquaintance with the inhabitants, whom I had previously visited three times. We arrived off the island on the 12th of October, and were immediately boarded by the island boat, containing old Glass (or the *Governor*, as he is invariably styled there), and his five companions, who were overjoyed to see us again. When a vessel heaves in sight, the men are always on the alert; and, to attract attention, whenever the ship is sufficiently near to see it, they set fire to a large heap of brushwood, constantly kept in readiness for the purpose.

"A large increase of the inhabitants had taken place since our last visit in 1831, the number now reaching 41, exclusive of Glass's eldest son, absent in a whaler. Though they have frequent intercourse with American whalers, I was surprised to find that they had seen no free trader since we called four years ago. As the poor people are entirely dependent on ships for supplies of clothes, and many other necessaries, it may be imagined with what joy an Indiaman full of passengers is welcomed.

"On this, as on former occasions, my passengers, especially the ladies, were exceedingly liberal in their presents of wearing apparel, blankets, books, &c.; and I had great pleasure in adding to these valuable supplies a fine calf, with wheat, barley, and oats, for seed, and a variety of stores. Their stock consists of fifty head of cattle, seventy-five sheep (which at present thrive but indifferently), and a large quantity of pigs and poultry. The weather being very fine, all my passengers (except the ladies) were gratified with a trip on shore, when the Rev. J. Applegate, of the established church, took advantage of the opportunity to baptize twenty-nine persons, from the age of a few months to seventeen years, after an affecting address to all the assembled inhabitants. This was the first time they had ever seen a clergyman; and a baptismal register was now left with them. In the uneventful history of their little community our visit will no doubt form a very important era.

"In offering these few details to the perusal of your numerous readers, I am actuated by a hope that some commanders of Indiamen may be induced to call at the island, which lies very nearly in the best route to India, when circumstances permit, as their visits will not fail to confer an incalculable benefit on the poor inhabitants.

"The wind happened to be very light during the few hours we hove-to off the island, and the barometer was high; but we had scarcely left it, when a gale came on rapidly from the northward, accompanied with thick rainy weather, and a heavy sea. I mention this as a proof of the great uncertainty of the weather there, and the extreme danger of ever anchoring, as is recommended by a correspondent of yours, signing himself 'Albert,' in your last January number. He appears to consider it the 'St. Helena' of outward bound Indiamen! but, after a good deal of experience, I have no hesitation in saying that 'Albert' is greatly deceived. Though, for the benefit of the poor islanders, I have recommended to my brother commanders to call when convenient, I would desire to caution all from calculating with any confidence even on communicating, since, in two instances, when purposing to touch there the boisterous weather prevented us, and out of our four visits (all in the summer season), the last was the only one in which we were favoured with fine weather."

Mr. Glass has cut a trench from the run of water that forms the "Cascade," from which a hose is attached, and fills the water in the cove. However, if there be any swell running, the best way is to *raft* it, as there is no inconvenience arising from the seaweed, beyond an oar fouling occasionally.* Observe, also, that the current generally sets to the E.N.E. The ship ought to keep the Cascade to the eastward of South, in order to enable the boat to fetch the cove with the raft, (supposing the wind westwardly); and when the boat is returning, and has gained a sufficient offing to run down inside of her, and receive the raft with the head offshore. The people on the island will cheerfully render all the assistance in their power.†

A correspondent of the *Nautical Magazine*, who dates from Bombay, 12th June, 1834, says, I consider Tristan d'Acunha [Tristan da Cunha] the St. Helena of the outward voyage to India. Under ordinary circumstances it is easy of access, with very moderate charges. Money is not wanted, the people wishing *barter*. Tea, coffee, sugar, wine, spirits, &c. (the Americans supply bread), will be taken in exchange. I charged 15 per cent. on cost, and they seemed satisfied.

The *Diana* and *Mary*, from Liverpool, in December, 1833, after being retarded by adverse winds, received supplies here. The population at this time consisted of 6 men, 6 women, and 28 children. Mr. Glass reported that the government had sent them, from the Cape of Good Hope, a medicine chest and bale of blankets. They said the women were very badly off for clothes in winter; they had been supplied mostly by ladies in passing for India, and were much in want of some linsey-woolsey.

The following extracts from Captain H. M. Denham's notes on his visit in H.M.S. *Herald* will give the latest and most interesting intelligence of this remote colony. November 11th, 1852.—It was 2^h p.m. before we approached the island sufficiently near to pick up a boat which we had observed to put off from the S.W. point. From the crew, which consisted of two Englishmen, one Dutchman, and one American, we learnt that the little settlement of nine families was situated on the N.W. point of the island. These fine, healthy, and robust fellows, clad and speaking as Englishmen, made us feel that they came from an island of Great Britain; even the Dutchman had become English.

We were now lying-to, at 2½ miles off the stupendous cliffs, but not without anxiety lest the heavy swell should be accompanied with rollers, while the ship should lie in the eddy winds, or calm occasioned by those cliffs, which hoist a vessel at this distance round and round upon her heel, driving and drawing her under the cliff, where no bottom can be calculated upon for an anchor to avert destruction.

A N.W. wind placed us rather to leeward of the settlement on the next morning, and rendered the landing place a lee shore. Nevertheless, being a moderate breeze, and looking for advice and assistance from our friends of last evening, who encouraged our project of landing, this being their finest (young summer) season, we stood in.

---

* It is desirable to know where this seaweed originates, and how it is subsequently dispersed in the ocean. On the 1st of March, 1823, in lat. 36° 33′ S., lon. 6° 55′ W., Captain R. Coulter, in the ship *Westmoreland*, passed several patches of it with tangle; and next day, in lat. 36° 54′, lon. 4° 27′ W., another quantity of the same, with a large flock of white sea birds. [Sea Pigeons?] See the descriptions of *Lennon's Reef* and *Robson's Reef*, hereafter.

† The following document is as curious as it is honourable to the islanders.

"We, the undersigned, being three of the principal inhabitants of the island of Tristan da Cunha, do hereby agree to furnish any respectable middle-aged people (as man and wife), who are willing and capable to undertake the office of schoolmaster and schoolmistress, with house and all necessaries for their subsistence, as well as to present them every year at Xmas with a tenth part of the amount of sale of our produce, so long as the schoolmaster and mistress shall conduct themselves with propriety, and choose to remain with us. And we do further agree, that any person sent to us with a certificate of good conduct, and necessary qualifications, signed by the governor of the Cape of Good Hope, or by Admiral Warren (the naval commander-in-chief), shall be considered by us as eligible to the situation, and their passages to this island paid to the master of any merchant vessel bringing them, immediately on their arrival, the sum of passage money having been agreed upon by either the governor or Admiral before mentioned.

"Signed by us, at Tristan da Cunha, this 17th day of January, 1834, on board His Majesty's brig *Forrester*, in the presence of Commander Booth, R.N.

"W. M. GLASS, Governor.
"RICHARD RILEY, his X mark.
"JOHN TAYLOR, his X mark."

The first cast of the lead while standing in was 46 fathoms (sand), at 1½ miles off shore, abreast of the cottages situated on the tabled tongue of land immediately under the almost perpendicular side of the mountain, which slopes down to the sea from an altitude of 8,300 feet on all sides of the island, except this flat space which forms the north-western projection of the island.

A heavy forbidding swell rolled us onwards as we left the ship, and directed our boat towards the strip of dark pebbly shore marked by the islanders' whale boat, near the steep roadway which they have cut laterally with the cliff. This only clear spot, as respects boulders, can be hit upon when the islanders' boat may happen to be abreast, by making for the beach about a cable's length to the eastward of the cascade above the high water mark cliff, which ranges round this table land at from 10 to 100 feet above the sea level.

Keeping our eyes upon the men on the beach close to their boat, we approached with confidence, looking to them for a sign if we were not right in attempting the surf, which, judging from the undulation we were in, was likely to break fearfully at their feet. We were too distant as yet to see more than that it did break ; when, however, we were at one-third of a mile from the beach, we entered the zone of kelp, or tangle, which girts the island at that distance. Once amid this tough seaweed (*fucus giganteus*) which grows up firmly rooted in 15 fathoms water, the crests of the swell are allayed, and the break on the beach becomes proportionably moderate. But the boat becomes less manageable from the obstruction to her oars which the weed presents, although she would live a long time amongst it by making fast to it and riding between the outer waves and the beach surf. In our case we dashed in, as we were not beckoned away, and, shipping one sea, our whale boat was hauled up with the assistance of the young men who had accompanied the venerable governor (Glass) to the beach, before she could ship another. Thus, guided by common care, we effected a safe landing.

The precarious weather which prevails at the island, to the exclusion of visitors at the risk of not regaining their ship for days together, would have prompted us to embark early in the afternoon, for we soon learnt that two successive days' steadiness of wind, weather, or swell, could not be reckoned on. The weather on this occasion tempted us to prolong our visit until sunset for the purpose of learning as many particulars as possible concerning these isolated people, who, as a nucleus of English blood, language, customs, and church, claim our sympathy and protection.

The inhabitants of Tristan d'Acunha are all English by association, though not by birth and parentage. The population now amounts to 85 persons, all acknowledging the Church of England communion, and are under the pastoral care of the Rev. William Taylor, appointed by the Society for the Propagation of the Gospel, at the instance of an unknown benefactor, who, sympathising with the Tristan d'Acunha people in their destitution regarding religious and moral instruction, had remitted to the Society, in 1849, £1,000, to provide a resident clergyman, who would fulfil the offices of teacher and minister there for five years. It added much to the interest occasioned by a knot of our countrymen and their families so remotely situated, to witness the devotedness of the amiable pastor, Mr. Taylor. We accompanied him to the several cottages, where health and content prevailed without many apparent comforts. A very scanty supply of domestic furniture and utensils there was, but abundance of English farm production, such as bread, bacon, eggs, butter, milk, poultry, mutton, beef, and vegetables. For groceries and clothes they depend on a passing emigrant ship, or an American whaler, and for which they are ready to supply stock and refreshment, preferring barter to money; and ships may obtain water in their own boats, by filling casks in them by a hose connected with the cascade, while lying outside the surf, and which the young men of the settlement are always ready to assist in.

Ships are beginning to visit this island, but nothing should induce the commander of a merchant vessel to anchor, even if he should do so at the depth of 30 fathoms water, 1½ miles off, with the wind offshore; the swell which attends the brief calm preceding the change of the wind onshore (N. and N.W.) would be very likely to snap his cable, or jerk his anchor home, and be drifted on the rocky shore. He could not work off should he slip his cable, and if the onshore wind proved a gale, he must part from or founder at his anchor. The *Julia*, sloop of war, was so caught, parted, and was totally wrecked with a fearful loss of life, in 1818. But there would be no risk in holding several days' communication by boats, the ship standing off and on, especially if the season happened to be between October and April, which is the summer period here. William Glass, who was a corporal here at the time of the British occupation during Napoleon's captivity, is now upwards of seventy years of age, and sorrowfully afflicted with cancer in his under lip and chin, but was able to move about. He was at first (in 1821) chosen as chief, and is habitually called governor. His own family consists of wife, seven sons and eight daughters; and what with the progeny of the two old men-of-war's men, Riley and Taylor, who remained with him, and the settling of some four or five whaling men, and the marrying of the daughters of Glass and his first companions in this voluntary exile, the present population amounts, as stated, to 85. The young men and women partake of the mulatto caste, as the wives of the first settlers, Glass, &c., were natives of the Cape of Good Hope and St. Helena, but the children of the second generation are what we should term handsome brunettes of a strikingly fine figure. It is asserted that a more healthy place than this island cannot be found; that none of the epidemical diseases have reached them, and the children are not subjected to any complaints or illnesses common to children. The clergyman assured us that he had not traced a vice to contend with. We took leave of the venerable governor Glass and his boys at 7^h 30′ p.m., and as the wind had come round to N.W., we were enabled to shape a flowing course E. by S. towards the Cape of Good Hope.

The plan of the settlement Bay, to which the residents have given the name of *Falmouth Bay*, may prove of use to the future ships desirous of sighting it to correct their longitude, or to replenish water and stock. But it is dangerous to range along the margin of the island nearer than 2 miles, on account of the baffling eddies, which leave a ship in the onset influence of the swell. The settlement bay itself should not be approached within 1¼ miles, or in 40 fathoms water, a limit which is denoted by the sail rock off the western cliff, closing with the N.W. extreme of the bay and island, and which it does on the bearing of S.W. ¾ W. The islanders have no name for the north-western point, where our observations were taken at, so it was named *Herald Point*. Keeping the cross marks on of that point, and the erect rocky islet at the western extreme, the white cottage brought S.W. by S. (or the low black cliffy point at the eastern extreme of a black pebbly beach, bearing South), is the best line to run in upon, and which should be preserved whether for sending a boat on shore, while standing off and on, or for anchoring, which a steamer might do with comparative impunity. It must not be forgotten, that except the absolute eddy produced by the projection of the island at half a mile off, the current sets north-eastward. It may also be remarked, that although the peak rears its head 8,000 feet above the level of the sea, such is the conformation of its slopes, that its apex cannot be seen from the margin of the island, which preclude any vertical angle being measured from the high water mark on the cliffs. The peak is of easy access for barometer measurement, but is generally snow clad; it was so at the time of this visit, although young summer.

The geographic position of Tristan d'Acunha may now be considered as settled. Its north-western extremity lies in lat. 37° 2′ 48″ S., lon. 12° 18′ 39″ W., about one-third nearer to the Cape of Good Hope than to Cape Horn, and nearly on a line drawn between those well known capes, a position which places it 1,320 miles southward of St. Helena.*

17.—DIEGO ALVAREZ, OR GOUGH'S ISLAND.

This island appears to have been discovered and originally named by the Portuguese; but having been seen by Captain Charles Gough, in the *Richmond*, bound to China, 1731, it has since borne his name. Captain Heywood, in the *Nereus*, visited this island on the 8th of January, 1811, and made the longitude, by his chronometers, 2° 18′ East from Tristan da Cunha; this gives the lon. 9° 45′ W. By a mean of observations and chronometers in nine other ships, its centre has been given in 40° 19½′ S., and 9° 41¼′ W. Captain Broughton, in 1795, gave the lat. as 40° 19′, and the lon. as 9° 27′ or 9° 30′; but he observes that at the time the horizon was very confused; and other ships have given the longitude nearly the same. The *Coutts*, Captain Robert Torin, in 1800, made it, by lunars, 9° 46′. Captain B. Morrell, in 1829, made the longitude at the East point 9° 41′ W. *An appearance of the island is given on the chart.*

Captain Heywood found the summit of this island to be 4,380 feet above the level of the sea. The surface of the isle was mostly covered with a light coat of mossy grass. In some places were a few small bushy trees, like those of Tristan da Cunha. The cliffs rise precipitously from the sea, and from their fissures issue several beautiful cascades of water. At a cove on the North side of the island the boat landed with safety, just to the eastward of one of the rocky islets adjoining that side of the island.

---

* Nautical Magazine, April, 1853, p. 189.

Near the N.E. point of the island is a rock exactly resembling a church, with a high spire on its western end, and therefore called the *Church Rock.* To the southward of this rock, on the East side of the island near the shore, there is an islet, within which the landing is safe and easy, it being protected from the swell and northerly winds by the N.E. point. Here several Americans resided, but they had been unsuccessful during a long stay, most of the seals having deserted the island; but plenty of fish were procured; and birds of good flavour were caught, by lighting a fire upon one of the hills in the night.

The Americans said a ship might anchor in safety between the islet and the S.E. point of Gough's Island, at about half a mile from shore, in about 20 fathoms, tolerably good ground.

In December, 1813, H.M.S. *Semiramis* visited this place and found it deserted.

Captain Morrell has noticed that boats may land with perfect safety in the cove above mentioned, when the wind blows from any point South of N.W. and East. Here water may be obtained with ease, by running the vessel close in to the front of the cove, where she can anchor in 12 or 14 fathoms, with the huts at the head of the cove bearing S.S.W., and the North and easternmost islet bearing about N.W. There is a safe passage between these islets and the main island, with 15 fathoms of water over a rocky bottom. This island used to abound with fur seal, and sea elephants, but they were so much annoyed by their relentless persecutors, that they have sought more safe and distant retreats.—*November*, 1829.

18.—KATTENDYK'S DROOGTE AND LENNON'S REEF.

KATTENDYK'S DROOGTE (or dry bank), represented in about 33° S., 4° 45′ E. We should not, probably, have noticed this, if it had not appeared, without any notice of authority, in several modern charts. It is only to be traced in those of the Dutch, and its existence is, therefore, very doubtful.

Sir Jas. Ross passed exactly over its assigned position, but could find no bottom with from 120 to 150 fathoms, And on March 1, 1840, when in 33° 10′ S., 5° 50′ E., no bottom was reached with 580 fathoms of line.*

LENNON'S REEF.—We give this upon the authority of a letter that we have received from Mr. John Lennon, commander of the ship *Hibernia*, and which is as follows:—

"I have to inform you that, on the 9th of April, 1817, on my passage to India, in the ship Hibernia, I touched at the Island of Tristan da Cunha; and at 8ʰ a.m. of the above date sailed again. When clear of the island, steered E. by S. with a fair wind, until 11ʰ 30′ a.m. of the 12th, then in lat. 37° 31′ S., lon. 4° 42′ W. Ship going at the rate of seven knots per hour, perceived a sunken rock close on the larboard bow; bore up immediately, and with great difficulty escaped running on it. The part or end that at one time was close alongside, I could very distinctly perceive. The rock was about 9 feet under water; and, at the distance of about 100 yards, where I suppose the rock was nigher the surface. *There appeared fields of weed growing from the rock.* On taking a good look-out all round, we could perceive two other rocks or shoals at no great distance from each other. Bearings from Tristan da Cunha, by compass, E. by S., distant, by log, 357 miles. The weather beginning to get very squally, as I was preparing to lower my boat down, prevented my exploring it more to my satisfaction.

"The same information as the above I sent to the Marine Boards of Madras and Calcutta on my arrival."

It is to be regretted that we have not the exact position from observation. The longitude is, therefore, uncertain.

19.—ROBSON'S REEF.

For the following communication we are indebted to Captain Livingston, of Liverpool, by letter dated 26th of July, 1833. Captain Livingston states that he had the Journal to examine, and heard Captain Robson explain his reasons for being perfectly certain that the description is correct.

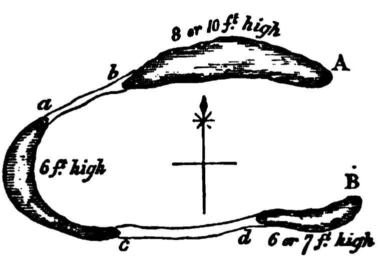
---

* Antarctic Voyage, vol. I., p. 32.

Barque *Anne*, of Liverpool, Captain W. W. Robson, toward the Isle of France, 1829.—On Monday, the 12th of October, made *Tristan da Cunha* exactly in the longitude given by Captain Heywood. On Sunday the 18th, at 9^h 30′ a.m. saw on the lee bow what Captain Robson at first supposed to be whales, but, when about 50 yards from them, observed they were rocks about 8 feet above the water, the sea breaking heavily on them: put the helm down and cleared them. They were something of a horse-shoe shape, or rather as represented by the annexed diagram, from a rough sketch by Captain Robson. There was a good deal of long tangle growing on them, and the Captain states that, had it been night, his vessel must have been inevitably lost.

The latitude of the Reef is 37° 35′ S., and longitude 7° 31′ E., by the same chronometer which gave the position of Tristan da Cunha in accordance with Captain Heywood's determination.

The position of the reef A to *b* is 8 or 10 feet above the level of the sea; the part B *d* 6 or 7 feet; the part *a c*, 6 feet; and the parts *a b* and *c d* are level with the water. On the eastern points A B there was much tangle.



Captain *Liddell*, of the ship *Wellington*, December, 1835, questions its existence, and he says, "I confess I was exceedingly surprised when this account first met my eye, as, on reference to my journals, I found I had passed twice nearly over the very spot, in the daytime. But, sir, when it is considered that this 'crescent rock' is situated not only in the direct route of all the outward bound vessels to the eastward, but also in the very cruising parallel of the American whalers, whose number yearly frequenting that part of the ocean exceeds *three hundred*, may we not be permitted to suspect, with that able and indefatigable hydrographer, Horsburgh, 'that dead whales, shoals of devil fish, and other huge marine monsters,' are still sometimes mistaken for banks and rocks? Three years ago, within a short distance of the reported site of this 'crescent rock,' we saw at one time around us *six* American whalers."

20.—TELEMAQUE ROCK AND ICE ISLANDS.

TELEMAQUE ROCK.—The following communication was dated Batavia, 2nd September, 1818:—

"We enclose an extract from the log of an American ship lately arrived here, describing the situation of a rock seen on the passage from Baltimore, supposed to be the Telemachus Rock, the existence of which was doubtful. The situation, if accurately laid down, is extremely dangerous, being directly in the track of ships running down their easting.

"Extract from the log of the ship *United States*, of Baltimore, Sherbail Wilkinson, commander, from Baltimore to Batavia, July the 20th, 1818.—'At 1^h p.m. passed a rock within fifty yards, above 6 feet above the level of the sea. We plainly saw the shells and small stones in the holes of the rock, when the sea left it: it is about the size of a large ship's hull, and not perceivable till on the top of it; the ship at that time was going eleven knots by the log. I just had time to luff-to to clear it. I supposed it to be that called the Telemachus Rock, laid down in lat. 38° 50′ S., but by four observations, with good instruments, we found it to be in 38° 12′ S., and, by the run afterward to St. Paul's, to be in lon. 22° 0′ E., from the meridian of London.

"(Signed) SHERBAIL WILKINSON, Commander."

This shoal seems to have been discovered by Captain Géraud, in the French brigantine *Telemaque*, who sailed from the Cape to Madras on the 22nd of January, 1786, and who gave its position as 38° 11′ S., and 21° 56′ E. · In my questions to the passengers, says a Mr. Petrie, who drew up the account, I was particularly attentive to ascertain *positively the* existence of such a shoal, beyond all probability of doubt; and I venture, *from their answers, descriptions* of what they saw, and explanations, to affirm, that a very alarming and dangerous shoal exists. It is not improbable that this shoal has proved fatal to some of those vessels which have perished in the voyage to India, and have never yet been heard of. I repeatedly asked the passengers if they thought it was possible that they might have been deceived by the shade of a cloud, or by a particular appearance in the sea, they agreed that, so far as they could trust the evidence of their eyesight to a very near, conspicuous, and distinct object, they could not be deceived; they not only saw green moss and grass upon the rock, but in some places the bare rock, perfectly distinct and plain, on both sides of the vessel; and one of the passengers said, he was perfectly convinced that the depth of water, on some parts of the rock, was not more than 2 fathoms.

In the year 1822, a vague account (dated Cape of Good Hope, Feb. 2,) was given of a bank said to exist to the southward of the Cape of Good Hope, and to have been discovered by the private ship *Albion*, on a voyage from England to Mauritius. Its N.W. end was stated to lie in lat. 38° 20′, lon. 17° 3′, or nearly so; and the S.E. end in lat. 38° 29′, lon. 18° 58′, but no depths of water nor other particulars were given; and it seemed probable that the whole might be merely a local discolouration of water, of which many instances have been known.

In a Report addressed to the Governor of the Cape of Good Hope, 26th Sept., 1822, this bank, or imaginary bank, and the Telemaque shoal, are thus adverted to by Captain Hanmer, commander of H.M.S. *Heron*:—"I have to acquaint your Excellency, that, having gained the latitude and longitude of the shoal or banks, as seen by the master of the Albion, we continued traversing and sounding over it, in every direction, until the 3rd instant, without gaining soundings, or observing anything like a shoal, bank, or broken water; and being fully satisfied that no shoal was in the latitude and longitude laid down, I proceeded to examine the *Telemaque*, and having reached its latitude and longitude on the 13th instant, as pointed out by various ships, I traversed over the whole of the ground, in every direction, sounding almost every hour, with from 130 to 175 fathoms of line out, and upwards, but found no bottom, nor any appearance that could justify the supposition of a shoal bank being near, and from the observations and remarks made during the time we have been out, I have no hesitation in deciding that *no such* shoals or banks as the *Telemaque* or *Albion* ever existed; and I trust that our exertions will put to rest the non-existence of them.

"I have no doubt that the Albion, as well as other ships navigating these seas, have met with heavy and confused seas, which break occasionally into white tops, and appear as if a shoal were in the vicinity; but as we have experieneed the same without gaining any bottom, I am of opinion these heavy seas are caused by the current setting against the wind, especially after a continuance of strong easterly gales, and assisted, perhaps, by a change to a westerly gale, which must, in such deep water, cause a confused and heavy sea, such as the master of the Albion experienced. During the whole of the time we have been examining for these shoals it has been blowing very hard, attended with a heavy sea; and from our passing so close to them, without finding any bottom, and no appearance of danger, it is impossible there could be any such shoals in existence, without my discovering and ascertaining their position."

Such is the evidence for and against the existence of the Telemaque Rock. Upon the whole we still suspect, and *are not singular in the opinion*, that such a danger, with others, do exist, though not exactly in the situation assigned, but probably more to the westward.

The following remarks, made on board the American ship *Macedonian*, Captain Blakeman, 5th May, 1816, corroborate the opinion above expressed:—

"At daylight, moderate and fair; wind S.W.; steering E.S.E. At 7^h a.m. saw breakers on the lee bow, bearing East, distance by estimation 7 miles. Hauled the wind immediately, steering S.S.E., sounded 90 fathoms. At 8^h saw a very extensive patch of breakers, bearing E.S.E. ¾ E. distant 6 miles; at 8^h 30′ saw another, bearing E.S.E. and being only one breaker in a small compass. At 9^h 30′ all the three breakers were very distinctly seen: the first bearing E. by N. composed of two parts, and the next, or middle one, very extensive, being, by estimation, nearly 3 miles in length from E. ½ N. to E. ¾ S., 5 miles distant. The southernmost breaker, very small, bore E.S.E. ¾ S.

"At 9^h 35¼′, the longitude, by observed distance of sun and moon, was 22° 54′ 30″, latitude, by account, 38° 0′ S. Depth of water, 40 fathoms. Steering S.S.E. ½ E. at the rate of 4 knots. The following bearings were immediately taken:—Northernmost shoal, E. by N. ½ N., about *5 miles*; *Middle* Shoal, E. ¼ N. to E. ¾ S. 6 miles; southernmost, S.S.E. ¾ E. 3 miles. [Hence the middle of the shoal may be taken at lat. 37° 57′, lon. (roundly) 23°.]

"At 12^h the breakers all appearing in one, bearing N.E. ½ N., distance about 12 miles; seen from the maintop when the bearings were taken. Lat. at noon, 38° 10′ S.

"(Signed) A. S. Page."

Ice Islands, etc., off the Cape of Good Hope.—The ices of the Antarctic regions, at times, are met with in very low latitudes, and may have given rise to the reports of islands in that vicinity. We subjoin notices of some of these.

On November 8th, 1840, Captain C. W. Nockells, of the ship *Brightmans*, then on a voyage to Australia, met with a magnificent iceberg, which he rowed around. It was 120 feet high, and in latitude about 39° 50′ S., and longitude 33° 40′ E.: and in the Proceedings of the Geographical Society of Paris there is the following:—

"M. Courtois, captain of the *Adolphe*, announced that, on October 15th, 1840, he discovered a new island, to the South of Cape Agulhas, in lat. 36° 3′, lon. 25° 59′. 'It was,' says he, '2 or 3 miles long, S.E. and N.W. The vessel kept in sight of the island from 5 a.m. to 10^h a.m. at the distance of from 12 to 15 miles.' It is needless to remark that there is no island in these parts, and that it could but have been an ice island that was seen; but the fact is interesting, that an ice island of this magnitude should be in this latitude. The same captain adds, that on October 17th he spoke the ship *Herald*, Captain Deval, from New Bedford, proceeding to Australia, who reported that he had met with two ice islands in lat. 36° 10′, lon. 16° 1′. Lastly, another navigator proceeding from Dordrecht to Batavia, on the 14th of September fell in with a large floating iceberg, 150 or 200 feet in height, and 4 leagues in circumference. It was in lat. 37° 54′, lon. 16° 26′ E. The presence of these masses of ice in this latitude, and the discovery of the Austral continent, which has been seen at several points of the American and French expeditions, would seem to indicate that the polar ices have experienced a great dislocation."—*Bulletin de la Géog. de Paris*, 1841, p. 58.

21.—BOUVET'S OR CIRCUMCISION ISLAND.

This island was discovered by *M. Louzier Bouvet*, in the French frigate *L'Aigle*, accompanied by *La Marie*, on the 1st of January, 1739. The particulars, with a plate, were published by Mr. Dalrymple, in his collection of 1775.

Between the parallels of 48° and 49′ S., and in about 7° of longitude East from Tenerife (9° 40′ West of Greenwich), the fogs commenced, and became so thick that the two ships could not see each other at the distance of a pistol shot. On advancing more to the South these fogs were frequent.

On the 15th of December icebergs were seen, some appeared to be 100 fathoms high above the water. Much drift or broken ice was met with, and the ships luffed up, in order to avoid damage. Some icebergs, subsequently seen, were supposed to be 200 fathoms in height. The navigation became dangerous; and for many days that the ships were in these seas, the masts, cordage, and sails, were covered with ice.

On the 1st of January, 1739 (the festival of the Circumcision), at 3^h p.m. the ships, in 54° 20′ of latitude, and longitude, as *computed*, 25° 47′ E. from Tenerife (9° 7′ W. from Greenwich), land was seen to the E.N.E. at 8 or 10 leagues. It seemed very high, covered with snow, and surrounded with ice, to a considerable distance. On the 2nd of January the ships having proceeded more to the S.S.E., the western part of the land bore N.E. about 13 leagues. On the 4th they had advanced to 5 leagues from the land, which, high and rugged, bore E.N.E., and they finally lost sight of it on the 9th, leaving it to the southward. It appeared to be an island, about 5 miles in length W.N.W. and E.S.E.

Notwithstanding the preceding description, this land was, for a time, given up as imaginary only. Captain Cook sought for it without success in 1775; on the 16th of February he came up from the southward, under double reef topsails and courses, having a very fresh gale, with snow and sleet. On the 17th he was in 54° 20′ S., lon. 6° 33′ E., and thence proceeded to the eastward, with a prodigious high sea from the South. He continued his course to the eastward until the 21st, and concludes his description of the route with this observation:—

"*We had now run* down thirteen degrees of longitude in the very latitude assigned *for Bouvet's Land.* I was, therefore, well assured that what we had seen could be nothing but an island of ice; for, if it had been land, it is hardly possible we could have missed it, though it were ever so small. Besides, from the time of leaving the southern lands, we had not met with the least signs of any other. But, even supposing we had, it would have been no proof of the existence of Cape Circumcision; for I am well assured that neither seals nor penguins, nor any of the oceanic birds, are indubitable signs of the vicinity of land. I will allow that they are found on the coasts of all these southern lands; but are they not also to be found in all parts of the Southern Ocean? There are, however, some oceanic or aquatic birds which point out the vicinity of lands, especially shags, which seldom go out of sight of it; and gannets, boobies, and man-of-war birds, I believe, seldom go very far out to sea."

Notwithstanding the evidence of the existence of this island, the magnetic expedition under Captain Sir J. C. Ross sought for this island in vain. "On the 17th of March, 1843, they reached the latitude of Bouvet's Island, 54° 19′, about 8° to the westward of the assigned position; but they, like Cook, searched for it in vain: and Captain Ross concludes that Bouvet had been deceived by the form of an iceberg. The last berg was seen on the 25th, in lat. 47° 3′ S., lon. 10° 51′ E."—*Nautical Magazine*, October, 1843, p. 678.

Whoever refers to our chart will perceive, by the track of Captain Cook, that he advanced from the southward *a little too far to the East.* He was misled by the original longitude of Bouvet. This is clear; for Captain Lindsay, in the *Swan*, descried the land on the 6th of October, 1808, which was found to be high and covered with snow. From this time to the 11th he made every endeavour to get close to the land, but found that it could not be approached within 3 miles, being surrounded by a mass of solid ice. The situation of the ship was, at times, perilous; it being in darkness and beset with loose masses and floating islands of ice.

The existence of this island has been proved by another vessel, the *Otter*, from which it was seen nearly at the same time, October, 1808.

From the observations taken in the *Swan*, the island appears to lie in 54° 16′ S., and 6° 14′ E. It appeared to be about 5 miles in extent, from East to West. The West end, which is very high, is now called *Dalrymple's Head.* It has been suggested as probable, that the isle may be approached in January or February, or during the summer of the southern hemisphere.

The island was visited in December, 1832, by Captain Morrell, who observes that it lies nearly true East from South Georgia, being in lat. 54° 15′ S., lon. 6° 11′ E., about 400 [430] leagues S.S.W. (true) from the Cape of Good Hope. We continued our course, with variable winds and occasional heavy weather attended with much snow and hail, until Friday, December 6, when we saw the island for which we were bound, bearing E.S.E. distant 1 league. This was at 2^h p.m., and at 3^h the next morning I sent the second mate with a well-manned boat to search for seal on the shores of the island. At 7^h a.m. the boat returned with 80 fur seal of a superior quality; and the officer reported that the seal were perfectly tame; so much so that they would come up and play among the men who were skinning their companions.

Here, on the western shore, was fine anchorage, inside of an immense number of ice islands, lying from 1 to 3 miles offshore; all of them aground in from 10 to 100 fathoms of water. Some of these ice islands were a mile in circumference, and lay so close to each other that it was with difficulty the vessel was gotten between them to the anchorage: but here, on the N.W. side of the island, in 17 fathoms of water, she anchored, about half a mile from shore, entirely sheltered by the ice islands on one side, and Bouvet's Island on the other, from every point of the compass.

At 9^h a.m. the boats returned with 112 clap-match and wig-skins; on the morning of the 8th, at 3^h a.m., they were again sent to examine the island, and discover new rookeries; but, after sailing completely round, not another spot could be found on which a seal could land; the shores being either perpendicular or covered by projecting cliffs.

This island, adds Captain Morrell, is evidently of volcanic origin; even the rocks having been melted by former eruptions into a complete mass of lava, presenting the appearance of blue and green glass. There are some small spots of vegetation on the hill sides; but the mountain, which rises about 3,000 feet above the level of the sea, is covered with pumice-stone, that spongy light crumbling substance, which is generally cast out from the volcanic craters of burning mountains. Who can declare how many ages have elapsed since the fires were extinguished which once raged in the bosom of this mountain!—He, alone, who laid the foundations of the earth.

The shores of this island abound with fish, and innumerable oceanic birds frequent the rocks and icebergs in their breeding season. I have no doubt that there is some other land in the vicinity of this; and I think the most likely place to seek for it would be to the South.

At 7^h p.m. on Sunday, Dec. 8, we got under way, and left this inhospitable island; steering to the South and East, with a fine breeze from the S.W. and fair weather, which continued until Thursday, the 12th, when the wind commenced blowing a strong breeze from the N.E., attended with a thick snow storm.

On the next day, the 12th, being in lat. 60° 11′, lon. 10° 23′ E., the wind moderated, and the weather became clear; at which time we found ourselves in the midst of a vast field of floating ice, from which arose, in almost every direction, elevated islands, or rather floating mountains, of the same glittering material. Our situation now was extremely perilous, while the prospect around us was at once appalling, sublime, and beautiful. All that we have ever read of fairy palaces, and castles with towers of crystal, surmounted by turrets and minarets of the whitest silver, may furnish some idea of the scene of treacherous brilliancy which now surrounded us. The morning sun shone upon them obliquely, and their irregular sides reflected its rays in a variety of gay colours; but we were not so much dazzled by their beauty as alarmed at their proximity, as large masses of ice and snow were frequently falling from their summits with a tremendous crash on the field ice below, of magnitude and weight sufficient to sink a ship of the largest size, should such a one unfortunately be found in the line of its descent. Happily for us it was nearly calm."—Pp. 58, 60.

According to the logbook of the *Sprightly*, Captain Norris, a vessel belonging to the honourable firm of Enderby's, the following passage, quoted by Sir John Ross, refers to this vicinity:—December 10th, 1825. The island is in lat. 54° 15′ S., lon. by chron., 5° E.; and as we are now certain it is an island, we name it Liverpool Island. It appears to extend 3 or 4 leagues from North to South; the North end is rugged, the South end low, the middle high and covered with snow. Owing to the sharpness of the rocks, and the weather coming on thick with much sleet and snow, was the whole and sole reason for not making successful landing.

On Dec. 13, 1825, they met with another island. "This island, which we have named Thompson Island, bears about N.N.E. 15 leagues from Liverpool Island. There are also three rocks, which we named the Chimnies, to the S.W., 4 or 5 miles from Thompson Island, and another rock 3 miles to the southward of them. This island is in lat. 53° 56′ S., lon. 5° 30′ E. On Dec. 16th they sounded on the South side of the island, and found from 35 to 20 fathoms, black sandy bottom, at a mile from the shore. Caught a number of small fish, resembling codfish. On the 18th they landed from the boats, but stormy weather immediately following, they could not regain the ships till the 24th, having killed only 48 seals. The S.W. point is the only place which affords a landing, as the boats went entirely around the isle, and nothing but perpendicular rocks could be seen; it bears evident marks of having been a volcano, as it is nothing less than a complete cinder, with immense veins of lava which have the appearance of black glass, though some are streaked with white."

From these statements it appears that there is more than one island, but not in the positions given, as Sir James Ross passed so near them that he must have seen them had they been correctly stated. That they do exist *somewhere* seems morally certain, and that the islands seen by Bouvet, Norris, and Lindsay, may refer to three separate localities; that there are two, is obvious from Captain Norris's statement. Their character must be left for future determination.

22.—ISLA GRANDE OR ISLE GRAND?

ISLA GRANDE, or Isle Grand, although unsuccessfully sought for by Captains Pérouse, Colnett, Vancouver, and others, may exist *near* the situation indicated in the Table of Positions (44° S. and 43° W.). From the original account, republished by Mr. Dalrymple, we give the following extract:—

"In the latitude of 45° S. there is a very large pleasant island, discovered by *Antony La Roche*, a native of England, in his passage from the South Seas, in the year 1675. *The Spanish author, who gives the abstract of* La Roche's Voyage, printed, *according to him, in 1678, says, that* La Roche leaving the land (discovered by him in 55° S., and which was seen by the *Leon*, in 1756), and sailing one whole day to the N.W., the wind came so violently at South, that he stood North for three days more, till they were arrived in 46° S.; when, thinking themselves then secure, they relate that, directing their course for the Bay of All Saints, in Brasil, they found, in 45° S., a very large pleasant island, with a good port toward the eastern part, in which they found wood, water, and fish; they saw no people, notwithstanding they stayed there six days. The size of this island is not mentioned in the Spanish abstract; but the expression *muy grande*, very large, and the expectation of finding inhabitants, seem to indicate that it is of great extent.

"The existence of this island, and, in some measure, its extent, is confirmed by other authorities: for Halley, near this longitude, in about 43° S., says, 'The colour of the sea was changed to pale green; and, in 45° S., he saw abundance of small sea fowl and beds of weed.' Funnel, in his passage into the South Sea, also mentions signs of land, from about 40° South, near this longitude. The Nassau fleet, 1624, had also signs of land here, so as to think themselves near the southern continent.

"These testimonies, and the *Leon*, in 1756, finding the other land mentioned by La Roche, leave very little reason to doubt his veracity: and, if there is such an island, in 45° South latitude, it cannot fail of being a very temperate and pleasant country, in a situation very favourable for carrying on the whale fishery and others, and also for the prosecution of any commerce which may be found in the countries to the South."*

The preceding remarks, published by Mr. Dalrymple in 1775, appear to have excited attention; since we find that, ten years after, under the orders of the French government, M. la Pérouse was in search of the island. In 1793 Captain Colnett sought for it under the special direction of the British Admiralty; and Captain Vancouver in 1795. The routes of each are annexed.

In November, 1785, M. la Pérouse quitted the Island of St. Catherine, in Brasil, and pursued a south-easterly course in search of the isle. On the 28th of November the *Boussole* and her companion were in lat. 35° 24′, lon. 41° 20′. On the 7th of December they were on the parallel assigned to the isle, 44° 38′, lon. 31° 40′, with seaweed in sight, and for many days birds of the albatross and petrel kind, which never approach the land but in the season for laying. The ships kept plying between the parallels of 44° and 45° S. until Dec. 24, and ran down, unsuccessfully, fifteen degrees of longitude on this route, or to 47° W. On the 27th a continued search was abandoned, under the persuasion that no such island could exist: but previously to this, on the 25th, the wind had settled in the S.W. quarter, and, continuing there several days, compelled the ships to quit the parallel and proceed W.N.W.†

In 1793 the search was resumed by Captain Colnett, who states, "On leaving Rio Janeiro, I stood away to the southward and eastward to search for the Isle Grand, which is said to lie in the latitude of 45° South, and was the first object recommended to me by the Board of Admiralty. On the 17th of March, at noon, lat., by observation, 39° 33′ South, lon., by the mean of chronometers, 34° 21′ West, and by account, 34° 25′; variation, 9° East. The sea appeared of a pale green, and we saw many birds, some of which were said, by several of my people, to be of those kinds which are supposed to indicate the vicinity of land; such as sandlarks, and a large species of curlew; but neither of the latter kinds of birds were seen by me. From noon of the 17th, until 6^h in the evening, the wind blew from the S.S.E., and we stood away to the southward and westward: it then became calm, and continued so till midnight, when it blew from the N.W., being, at this time, in the situation which I had often heard my old commander,

---

* A copy of the original Spanish document, with a translation of the same, is given in the *Nautical Magazine* of January, 1835.

† After this, in proceeding toward Staten Island, M. la Pérouse states that the heavy gales ceased, and the month of January was nearly as pleasant as that of July on the coasts of Europe. The wind blew from the N.W. and S.W. only, but all sail was carried, and the changes of wind were so distinctly announced by the appearance of the sky, that they were certain of the moment when the wind was going to shift, and were thereby able to run on the most advantageous tack. The moment the horizon became hazy, and the sky cloudy, the S.W. wind shifted to the West, and two hours afterwards it came round to the N.W.: on the contrary, when the haziness disappeared, they were sure the wind would not be long before it came round by the West to the S.W. During 66 days sailing it does not appear that the wind veered from North to South by the East more than eighteen hours.

Soundings were found on the Coast of Patagonia in 47° 50′ S., and 62° 17′ W.

Captain Cook, mention as the position of the Isle Grand: I accordingly entertained great expectations of seeing it; more especially as the birds appeared in great numbers during the whole of the day. In the evening we stood away to the southward, in which direction I continued my course for the night. At daylight, on the 18th, the surface of the water was covered with feathers; and frequently in the forenoon we passed several birch-twigs, as well as quantities of drift wood and seaweed. These appearances continued until noon of the same day, when our observation was in lat. 40° 12′ South, lon. by observation of sun and moon, 25° 34′ West; and, by mean of chronometers, 34° 8′. At this time the appearance of the sea had changed to a dirty green; which could not be the effect of the sky, as it was very clear: those tokens of land induced me to heave-to, and try for soundings with 150 fathoms of line, but got no bottom: we had no sooner got the lead in, when, to our great astonishment, at 3 or 4 miles distance from us, the whole horizon was covered with birds of the blue petrel kind. At the same time black whales were seen spouting in every direction, and the boats pursued one to harpoon it, but without success. Indeed, we were not very solicitous to kill black whales, and willingly gave up the chase at this time, to make all the sail we could, and to exert our utmost efforts, in order, if possible, to discover the land before night; which every one on board had possessed themselves with the idea of seeing, although at such a considerable distance from the latitude in which it was supposed to lie.

"During this afternoon we passed several fields of spawn, which caused the water to wear the appearance of barely covering the surface of a bank. At sunset we could see as far as 12 or 14 leagues; but did not perceive any other signs of land than the great flight of birds which continued to accompany us; and they were so numerous at times, that had they all been on the wing together, and above us, instead of rising in alternate flocks, and skimming after the whales, the atmosphere must have been altogether darkened by them. And the number of whales in sight presented a fair opportunity of making a profitable voyage in the article of black oil; but my predominant object was to fulfil the particular services recommended to me by the Lords of the Admiralty; and in one point I had, at this moment, the most flattering hopes of succeeding.

"Toward the evening the barometer fell, and the weather began to be cloudy: but I continued standing to the southward with a fresh breeze till midnight, when we hove-to and sounded, but did not find ground with 170 fathoms of line. The gale was increasing every hour with a heavy sea; and, by daylight, we could carry only close-reefed topsails and foresail. The weather was dark and hazy, the sea assumed a deep lead colour, many birds and whales remained with us, and we passed large quantities of seaweed. At noon we were in the latitude of 43° 3′ South, and lon. 35° 38′ West. Here we sounded, but found no bottom; nevertheless every circumstance strengthened our conjectures that we were nearing the land, which induced me to proceed on my course, although it continued to blow hard from west-north-west. At midnight we hove-to, and sounded with 170 fathoms of line, but found no bottom. At daylight we sounded again with 200 fathoms of line, and were equally unsuccessful. We now made sail, and at noon our latitude was 44° 51; lon., by observation, 34° 59′; and, by mean of chronometers, 33° 53′ 30″ West.

"The birds lessened greatly in numbers, and with them our hopes of finding the land, which was the object of our search. I continued, however, to cruise about for several successive days near this longitude, but saw nothing to encourage any further endeavours.

"The season was now far advanced for doubling Cape Horn, and it appeared to me, that the most rational course I could take would be to run down West to the main land of Patagonia, in the latitude in which the Isle Grande is placed, as we were now to the eastward of Mr. Dalrymple's position of it: so that if it was not found in that latitude, I might, on my return, search for it in the lat. of 40° and 41°; having strong reason to believe that there is land in or near those latitudes, but to the eastward of the longitude which I crossed; as, otherwise, I am at a loss to account for such a quantity of birch-twigs, seaweed, drift wood, and birds, as were seen in that situation. Some of these birds appeared to be quite young, from the difficulty with which they seemed to use their wings; though that circumstance, it is possible, might have proceeded from their being gorged with sea-blubber, with which the surface of the water was covered.

"From the land discovered by La Roche, in lat. 55° South, which I touched at with Captain Cook in the year 1771, who named it *Georgia*, I am disposed to believe that the *Isle Grande* also exists, and that my not being able to find it arose from an error in copying *the latitude given* by La Roche: nor can I doubt, from the quantity of whales I perceived near its supposed situation, that it would prove a much greater acquisition than the Island of St. Georgia, to which many profitable voyages have been made for seal skins alone.

"This route, however, will be of some advantage to British navigators, even if no land should be discovered according to our expectations, as it will tend to undeceive the masters and owners of whalers, who have entertained an opinion that the black whale was never to be found in bodies so far to the eastward; for, if half the whalers belonging to London had been with me, they might have filled their vessels with oil."

Captain Colnett subsequently proceeded to the N.W. of Falkland Islands; and on the 9th of April, 1793, struck soundings there in 65 fathoms. The ship then stood for Cape St. John, the eastern end of Staten Island. The winds to this place were variable, N.W., S., S.E., E., and N.E.; the greatest depth at which bottom was found was 90 fathoms; then no bottom at 150. On the 13th, at daylight, the Isles of Diego Ramirez were passed at the distance of 3 or 4 leagues.*

On the 29th of May, 1795, Captain *Geo. Vancouver*, in H.M. sloop *Discovery*, on his return homeward, was in lat. 56° 57′ S., lon. 67° 31′ W., and he describes his route thence as follows:—

Considering that we were now sufficiently advanced to the southward to avoid any inconvenience or interruption from the islands which lie off Cape Horn, I determined to shape such a course to the north-eastward, as we proceeded on our route to St. Helena, as might afford me an opportunity of seeing and determining the situation of the *Isla Grande*, the southern point of which is stated to be in lat. 45° 30′, lon. 46° 40′. On the 30th we were visited by strong gales and heavy squalls of wind from the West and north-western points, which frequently reduced us to our courses: as we proceeded toward the N.E. the latitude, by an indifferent observation, appeared to be 55° 28′, and the longitude at noon, by chronometer, about 60° 51′.

June 4. Latitude, by the dead reckoning from the preceding day, 46° 16′; longitude, brought forward by chronometer, 49° 52′; it was reasonable to conclude, as we had a fresh breeze from the W. and S.W., that we were approaching very rapidly toward Isla Grande; and, as I was very solicitous to examine the space allotted to this island, I continued our course to the northward, that we might fall into its parallel some leagues to the westward of the spot assigned to it; but in the afternoon we were again visited by a very furious storm, at first from the N.W., but soon afterwards from the S.W., which obliged us to steer to the eastward, under the foresail, and close reefed maintopsail on the cap, in order that we might keep ahead of the sea, which ran excessively high, and broke with great violence. The S.W. gale continued to blow very hard until the morning of the 5th (June), when it moderated, and was attended by clear, though severely cold weather. We now stood to the northward, and at noon our observed lat. was 45° 30′, lon. 47° 5′; in this situation I esteemed it a very fortunate circumstance that the weather was fine, and that the horizon was remarkably clear in all directions, excepting between the N.W. and N.N.E.; so that had any land been above our horizon, within the distance of from 10 to 20 leagues, it could not possibly have escaped our notice.

Between the limits above mentioned, which were occupied by a haze, we could also have discerned land at the distance of 5 or 6 leagues, and as it was in this direction that we were steering, we must have fallen in with it had any land there existed. From noon our course was directed about N. by E., which, by 8^h in the evening, brought us to the lat. of 45° 4′, lon. 46° 57′. The weather continued to be tolerably clear until the close of the day, but no land was within our view; nor had we the least reason, from any of the usual indications, to suppose ourselves in its vicinity, excepting from the number of birds that were about the ship.

Since, therefore, we met with no drift wood, nor any circumstance to indicate our vicinity to land (and had any been near us in a westerly direction, such indications most likely would, from the generally prevailing winds, have been presented to us), I was led to conclude that if Mr. La Roche did discover any island under the parallel of 45° S., such land must have been to the eastward of our track. Under this persuasion, about

---

* In March, 1826, the Isle Grande was sought for by Captain Benj. Morrell, of New York, between the meridians of 36° and 29° W. and parallels of 45° and 43°. His routes are described in the Narrative of his Voyages, published in 1832; they intersect, in several points, those of Pérouse and Colnett, but no indications of land were seen.

8^h in the evening, as the weather had the appearance of being fine, and the wind moderate, I steered a more easterly course, with an intention, should the winds prove favourable, to continue about this parallel until we should pass the meridian of South Georgia [37° W.]; from the shores of which island it is with great reason supposed La Roche steered to the North, and in that route fell in with Isla Grande.

On Saturday morning, June 6th, although the weather was gloomy, with the wind from the North, yet it admitted our seeing distinctly all round us for several leagues; we continued to stand to the eastward until 4^h in the afternoon, when in lat. 45° 6′ S., lon. 45° 10′, the atmosphere was sufficiently clear to have seen any land above our horizon at the distance of 6 or 8 leagues, but nothing of the kind was within the limits of our view. The wind now veered to the N.E. and E., and blew a fresh gale, with which we stood to the North, in the night to the S.E., and on the following morning to the S.S.E. and S., so that we were unable to gain the parallel of 45° without employing more time than I had now to appropriate to this examination; being, from the extremely bad condition of our sails and rigging, very anxious to lose no opportunity of making the best of our way to St. Helena; and for this reason I gave up all further thought of searching for Isla Grande, and continued our course toward the N.N.E.

This short investigation, however, will serve to show that no such island exists in or about the lat. of 45° S., between the meridians of 48° and 44° 40′ W., and it seems most likely that Dr. Halley determined the same point, namely, that there was no such island at a degree farther to the westward.*

We shall now take a view of the routes of several mercantile vessels, all of which will be found to the westward of the meridians of 40°, and by each indications of land, although not the land itself, have been seen.

1. *Captain Williamson*, of the brigantine *Pizarro*, on his passage from Guayaquil to Gibraltar, in July, 1827, from 8^h a.m. of the 2nd, in about lat. 43° 4′, lon. 44° 15′, to sunset of the 3rd, in lat. 41° 40′ S., lon. 42° 28′, saw many of the appearances of the proximity of land; viz., many penguins, great quantities of drift wood, like twigs of birch, and some of it of so considerable a size that, if the weather had permitted, he thought of getting some of it for firewood. The water was a good deal discoloured; indeed, so much so, as to create some alarm in the mind of the Captain, who describes the discolouration as unlike that over a sand bank, but rather of that darkish green colour frequently seen at a considerable distance from land. Captain Williamson also observed a great quantity of birds' feathers, and many aquatic birds.

Captain Williamson adds, that he stood 7 hours to the eastward, running at the rate of 9 knots; but night coming on he abandoned the search, although he had been in strong hopes of making land, and the appearances of its proximity seemed to increase.

Among the wood seen by Captain Williamson, some was decayed, but some branches and twigs did not appear to have been more than two or three days in the water. The feathers he considered as principally those of the penguin. At one time the brush wood was so thickly strown, that his mate wished him to alter the course, in order to get clear of it.† He had only about 70 fathoms of deep sea line, but rounded-to, two or three times, and sounded,—*no bottom*. Captain Williamson is of opinion that land must be in the vicinity, as sure as he is in existence.‡

2. *Captain Henry Dott*, of Liverpool, says that on returning home from Peru, when nearly in the latitude of the Isla Grande, as denoted on the chart (*longitude not given*), he also met with discoloured water, and immense quantities of birds, one hundred times

---

* Vancouver, Vol. III. pp. 467—470.

† With propriety it has been asked, Where could this wood come from? Certainly not from the Falkland Islands, nor Georgia, nor South Shetland, for none is there. It is tolerably certain that it comes from the western coasts of Patagonia, or the Straits of Magalhaens are the source of this drift wood, brought round by the Cape Horn, and the Antarctic currents.

‡ In June, 1824, Captain Livingston entered the questionable limits of the neighbourhood of Isle Grande; and, aware of the importance of his remarks, noted them down with care. At rather more than a degree to the westward of Captain Williamson's route, in lat. 43°, lon. 45½°, he observed an immense number of birds, which, as he continued to the S.W., do not appear to have followed him. On his return, in September, 1825, rock weed is noted at the distance of about 3° to the south-eastward of his track on his way out. On the 10th of that month, in about 45° 40′ S. and 42° 39′ W., a lark, nearly famished, was caught on board.

more than they saw on days prior and subsequent; and while he was below at dinner, about six passengers who were on deck maintained that they actually had seen land, but that the fog had covered it before he came up.

3. By the *Salacia's* log, Captain Livingston observes, "The nearest guess I can give to the longitude, if land was really seen, is 43¼° W., in lat. 44° 46′. Now near this we had, in the *Jane*, a strong northerly current, and the thermometer in the water sunk 4° during the night. I am convinced that Isla Grande exists."[*]

4. *Captain Lincoln*, of the *Inca* brig, of Liverpool, unsuccessfully tried to find Isla Grande, both eastward and westward of the position *probable*. To the eastward he saw no indications of land; but in about 41¼° W. he several times saw large flocks of birds, and caught one not web-footed; also saw many twigs of trees pretty fresh, but no wood, or large branches, but discoloured water. Tried for soundings, but got none.

5. On the 15th of February, 1833, at about 200 leagues to the north-eastward of the Falkland Islands, in lat. 45° 45′ S., lon. 44° 57′ W., *Captain Boulton*, in the *Arethusa*, saw many sea birds, sperm whales, and snow petrels innumerable. Barometer, this day, 30.6; thermometer, 68°.—On the 6th, lat. 44° 46′, lon. 42° 32′, many birds, with whales, sperm and fin-backs (sea of a pale olive colour), were seen. Squalls, thunder, and vivid lightning. Var., 29.4, therm., 65°.—Feb. 7th, lat. 42° 21′ S., lon. 41° 10′. Winds W. by S. to S.W. Strong gales, and a most tremendous cross sea. Var., 30.7, therm., 66°.—*Naut. Mag.*, Vol. II., p. 461.

6. It was some time since announced that high land had been seen in lat. 46° 40′, lon. 48° 35′, by the commander of the *Sir John Rae Reid*. The spot is to the south-westward of the routes above described, and so near to that of Captain Vancouver, where he was favoured with *fine weather*, that he surely must have seen it, if existing. We conclude therefore, that it must have been a large iceberg only, as shown by the Editor of the *Nautical Magazine*, in his number for January, 1835. Numerous birds, however, surrounded the vessel, among which shags and divers were seen, a species of bird seldom met with, unless in the vicinity of land.

It now appears, therefore, that the easterly position of the isle, as formerly assigned, is finally given up; that the limits of research for it are very much reduced; and the island, *if it exists*, is to be sought for only westward of the meridian of 40°, between it and 45°, and between the parallels of 41° and 46° South.

23.—MONTEZUMA ROCK.

According to the Cape of Good Hope Shipping List of July 14th, 1843, Captain A. M. Shiverick, of the American whaler *Montezuma*, discovered, on March 23rd, 1843, a rock lying in lat. 29° 32′ S., lon. 39° 30′ W. This is all the information given respecting this survey.[†]

24.—ARIEL ROCKS?

These rocks were stated to have been discovered by the schooner *Ariel*, on her passage from Liverpool to Valparaiso, *Dec.* 22nd, 1827. "At 11^h 45′ a.m., moderate breezes from N.E., then steering S.S.W. by compass, going about 6 knots through the water, all studding sails set on both sides, saw something of a reddish appearance above water, about a quarter of a mile distant; hauled into it, immediately took in all the studding sails, and sounded ground, 47 fathoms, fine grey sand. The object seen was about 6 feet above water, but larger underneath. When close in saw another head about a cable's length to the N.E. of the first, 2 or 3 feet below the surface of the water, also of a reddish appearance. The sea was breaking over both, and making a noise. There was some seaweed about them, and an immense number of sea birds. The correct position I give as, lat., by a good meridian observation of the sun, 40° 0′ S., lon., by good lunar observation, taken that day, also by chronometric observations, 57° 37′ W."—*Thomas Dixon, Master.*

---

[*] In lat. 47° S., and 80 leagues eastward from Cape Blanco, the old charts exhibit an island, said by *Captain Cowley* to have been seen by him, on his voyage round the world, in 1686. In his second voyage to the Falkland Islands, *M. de Bougainville* endeavoured for several days, without success, to find this island; another attempt was afterwards made by him on his voyage to the Pacific Ocean, and proved equally fruitless. Cowley admits that bad weather prevented his landing, he not being able to put his long boat out to sea; and there appears to be sufficient reason for presuming that no such island exists.—*Introduction to Bougainville's Voyage*, Eng. tr., pp. xv., xvi.

[†] See also Verhandelingen en Berigten, door Tindal en Swart, Amsterdam, 1844, pp. 530.

From the nearest land these rocks are, therefore, about 200 miles distant; and they lie in the direct route of vessels bound to the southward from the Rio Plata. Another examination may be desirable here.

Captain *P. P. King* sought for these rocks, but without success: in the *Narrative of the Voyages of the Adventure and Beagle*, Vol. I., p. 460, he says:—

"On June 21st, 1830, we sailed with a fresh breeze from the S.W.; and at 9^h a.m. on the 25th, when about 1 mile southward of the alleged position of the Ariel Rocks, and near their nominal longitude, I hauled to the wind, and ran some distance on their parallel, looking out for broken water. There was a very regular and heavy swell, as much as would be raised by a gale of wind, but caused, apparently, by a current; and while waiting for the meridian altitude, before bearing up, having run 20 miles on the same parallel, a heavy swell rose on the quarter, which struck our weather quarter boat. For a moment I thought we had indeed found the rocks; and the huge black back of a dead whale, which just then showed itself very near the vessel, much increased the sensation. I imagined that we were in a meeting of tides and currents, where old trees, dead whales, &c., are often found, and have frequently caused reports of rocks; for the water was not more shallow than we had found it during the day, the soundings having varied from 40 to 50 fathoms: so having obtained the meridional altitude we bore up, and steered our course again."

Captain FitzRoy also, in the same work, Vol. II., p. 119, says, "In the first volume some notice was taken of the supposed Ariel Rocks, and I will avail myself of this opportunity to say that at various times the *Beagle* passed over and near their asserted position; and that she likewise searched for the reported Aigle shoal or rock, without ever finding the slightest indication of either."

There is an announcement in the Nautical Magazine, 1845, p. 47, which, *if correct*, may bear on the subject. It states that Mr. Tinnon, of the brig *Middleton*, of Maryport, on March 7th, 1844, when on his passage from Buenos Ayres to Valparaiso, discovered rocks in lat. 40° 22′ S., lon. 55° 13′, per chronometer (five days out), on which broken water was seen for a quarter of a mile North and South. The ship was about a quarter of a mile from them when discovered. Supposed them to be the Ariel Rocks, though there is a considerable difference in the position. This is all that is stated, but no soundings or verification given, a most reprehensible omission. We leave it to the reader's judgment.

25.—THE FALKLAND ISLANDS.

The **FALKLAND ISLANDS,** situated between 51° and 53° South latitude, and 57° and 62° West longitude, consist of two principal islands, the East and West Falkland, with a considerable number of others, of different sizes, clustered around them and in the straits between them.

The greatest length of East Falkland is about 95 miles, the mean, 85; the greatest breadth about 53 miles, the mean may be averaged at 40 miles. The West Falkland is about 80 miles in length; the width varies considerably, but 40 miles may be considered the greatest, and 25 miles the mean.

The remaining islands, about 200 in number, vary very considerably, from 16 miles in length by 8 miles in breadth, to mere islets of half a mile in diameter.

The sovereignty of the Falklands is now vested in the British crown, which has lately appointed a lieutenant-governor to them; but the title has been the subject of much dispute, and has occasioned much dissertation. The following short history, collected from Captain FitzRoy and others, will explain the grounds on which the various claims rest.

It has been asserted that Americus Vespucius, then employed by the King of Portugal, saw these islands in 1502; but if the account of Americus himself is authentic, he could not have explored farther South than the right bank of La Plata. If the Portuguese, or any other people, actually traced, or even discovered, portions of coast South of the Plata before 1512, it appears strange that so remarkable an estuary, 120 miles across, should have been overlooked, especially as soundings extend 200 miles seaward of its entrance; and that the world should have no clear record of its having been discovered prior to the voyage of Juan de Solis, in 1512. Vespucius has already robbed Columbus, and his predecessor Cabot of the great honour of affixing their names to the New World: shall he also be tacitly permitted to claim even the trifling distinction of discovering the Falkland Islands, when it is evident he could not have seen them?

On the 14th of August, 1592, John Davis, who sailed with Cavendish on his second voyage, but separated from him in May, 1592, discovered the islands now called Falkland.

In 1683—84 Dampier and Cowley saw three islands in lat. 51° to 51° 20′ S., which they (correctly) supposed to be those seen and named by Sebald de Weert. It was called by the editor of Cowley's narrative PEPYS' ISLAND, in compliment to the then Secretary of the Admiralty.

Sir Richard Hawkins sailed along the northern shores of these islands in 1594, and he, ignorant of Davis's discovery, named them HAWKINS' MAIDEN LAND. His account appearing first and prominently before the public procured for them the name by which they were known, until Strong, in 1690, sailed through, and anchored in the channel, which he named Falkland Sound. How it happened that the name FALKLAND, originally given to the sound alone, obliterated Hawkins, and has never yielded to Davis, is now a matter of very trifling importance.

Several ships of St. Malo passed near the Eastern Falklands between the years 1706 and 1714, from whose accounts M. Frézier compiled his chart, published in 1717. In consequence of the visits of these ships of St. Malo, the French named the islands LES MALOUINES. The Spaniards adopted the French name, slightly altered by changing Malouines into Malvinas: even now the term Maloon, a corruption of Malouines, is sometimes used by English or Americans instead of islands.

During the early part of the last century France maintained a lucrative commerce with Chilé and Peru by way of Cape Horn, and the advantages of a port at the eastern extremity of the Falklands did not escape her active discernment, and at the commencement of 1763 the court of France determined to form an establishment at them. De Bougainville proposed to commence it at his own expense, and accordingly set out from St. Malo with an armament and settlers. On the 17th of March, 1764, having arrived at the Falklands, Bougainville decided to place his establishment at Port Louis on the spot where the present settlement stands, and forthwith commenced operations.

On the 23rd of January, 1765, these islands were taken possession of for the British Crown by Commodore Byron, and in consequence of his favourable report, Captain Macbride was sent out in H.M.S. *Jason* to begin their colonization. He arrived at Port Egmont in January, 1766.

Spain laid claim to the islands immediately after the French settlement, which was given up to Spain on April 1st, 1767, who indemnified the settlers.

In 1770 a Spanish armament attacked the British colony at Port Egmont, and obliged it to surrender, but it was restored by the Spanish government. It was forsaken, however, in 1774, but the signals of possession were left flying.

Spain afterwards withdrew from the islands, and left them uninhabited, probably at the commencement of the present century, and thus there was no person left who claimed even the shadow of authority over them.

From these short notices it will appear evident, that if discovery and prior occupation give a title to new and uninhabited countries, they undoubtedly belong to Great Britain; for Davis first discovered them; Hawkins first named them; Strong first landed on them; and (excepting the French) Byron took possession of them; and (again excepting the French) Macbride first colonized them. And with respect to the French claim, it was, as before stated, resigned for ever to Spain. The right of sovereignty, therefore, rests between Spain and England; and Spain's only claim rests upon the unstable foundation of a papal bull.

The islands remained uninhabited and unclaimed until the month of November, 1820, when Commodore Jewett, then commanding the *Heroine* frigate, took formal possession of the islands in the name and by the authority of the *United Provinces of South America*, or government of *La Plata*, otherwise *Buenos Ayres*. This act of the Argentine Republic was scarcely known in Europe for many years, and it is difficult to see upon what reasonable grounds they rested their claim.

In 1823 the Buenos Ayrean government took another step in the appointment of a "comandante de las Malvinas;" and in the same year, *Don Louis Vernet*, a German by birth, solicited and obtained *from them* the fishery and cattle on the eastern island, and land for a settlement. This did not prosper, and in the next year M. Vernet sailed himself in a second expedition. In 1828 the government of Buenos Ayres granted to him (with certain exceptions) the right of property in the Falkland Islands, and in Staten Land; with entire and sole right to all its soil, cattle, horses, hogs, fisheries, &c. The following is a description of his settlement, from a letter quoted by Captain FitzRoy:—"The settlement was in Berkeley Sound, situated round Port Louis, a small cove, which has a narrow entrance from the sound; this entrance, in the time of the Spaniards, was commanded by two forts, both now lying in ruins; the only use made of one being to confine the wild cattle in its circular wall when newly brought in from the interior. The governor, Louis Vernet, received me with cordiality. He possesses much information, and speaks several languages. His house is long and low, of one story, with very thick walls of stone. I found in it a good library of Spanish, German, and English works. A lively conversation passed at dinner; the party consisting of M. Vernet and his wife, Mr. Brisbane, and others. In the evening we had music and dancing. In the room was a grand pianoforte; Mrs. Vernet, a Buenos Ayrean lady, gave us some excellent singing, which sounded not a little strange at the Falkland Islands, where we expected to find only a few sealers.

"M. Vernet's establishment consisted of about fifteen slaves, bought by him from the Buenos Ayrean government, on the condition of teaching them some useful employment, and having their service for a certain number of years; after which, they were to be freed. They seemed generally to be from fifteen to twenty years of age, and appeared contented and happy.

"The total number of persons on the island consisted of about one hundred, including twenty-five Gauchos,* and five Carruas Indians. There were two Dutch families (the women of which milked the cows and made butter); two or three Englishmen; a German family; and the remainder were Spaniards and Portuguese, pretending to follow some trade, but doing little or nothing. The Gauchos were chiefly Buenos Ayreans, but their capitaz, or leader, was a Frenchman."

In 1829 Vernet warned off some North American sealers; and in 1831, upon their repeating the sealing excursion, of which he had complained, he detained them by force. This act, and the circumstances arising out of it, drew upon him and his unfortunate colony the hasty indignation of Captain Silas Duncan, of the United States corvette *Lexington*, who, on his own responsibility, surprised, assaulted, and made prisoners of many unoffending people, and unwarrantably destroyed both property and buildings. M. Vernet was at the time absent at Buenos Ayres, attending the trial of the sealers in question; but Mr Brisbane, and several others, were put into irons and carried away on board the Lexington to Buenos Ayres, where they were delivered up to the Buenos Ayrean government, in February, 1832. The United States government supported their officer, and formally demanded a full reparation of the wrongs done to their citizens. While the United States and Buenos Ayres were discussing the questions at issue, Great Britain, following up the solemn warning she had given to Buenos Ayres, issued orders to the commander-in-chief on the South American Station to re-assert her sovereignty of the Falklands.

Accordingly Commodore Onslow, in H.M.S. *Clio*, hoisted the British flag at Port Louis, on January 2nd, 1833, while, about the same time, H.M.S. *Tyne* anchored in Port Egmont, on the Western Island. The small Buenos Ayrean garrison quietly withdrew, and sailed for the Plata. Shortly before, this garrison had mutinied, and had barbarously murdered their commanding officer. Having proclaimed the Falklands to belong to Britain, they departed, leaving the flag in charge of an Irishman, who had been Mr. Vernet's storekeeper.

In March, 1833, Captain FitzRoy, in the *Beagle*, anchored in Berkeley Sound; he found the island in a very disordered state from the want of government. During his stay, Mr. Brisbane returned as the agent for M. Vernet's private affairs: the whole colony was a miserable ruin, caused by the Lexington's visit; and on the 6th of April he left the islands with dismal forebodings from the disordered state of society, and these were exceeded by the sad reality.

In a despatch, dated November, 1833, it appears that eight Gauchos and Indians of bad character, on the 26th of August in that year, had attacked and brutally murdered Mr. Brisbane,* Dickson, the person in charge, and three other principal persons: after which they pillaged the houses and plundered the place of whatever it contained, and drove off all the cattle and horses up the country, laden with their booty. Thirteen unarmed men, three women, and two children, remained in the town two days with the murderers, and then escaped to one of the islands in the bay; where, until relieved by the English sealer *Hopeful*, they lived upon birds' eggs and fish. The murderers were subsequently taken and sent to Buenos Ayres.

---

* *The Gauchos* are the hunters of South America, celebrated for their horsemanship, and for *the use of the bolas* and the *lasso*, with which they catch wild horses and cattle.

On the 10th of March, 1834, Captain FitzRoy again visited Berkeley Sound; the settlement looked more gloomy than ever, and not far from the house where he had lived they found, to their horror, the feet of poor Brisbane protruding above ground. So shallow was his grave, that dogs had disturbed his mortal remains, and had fed upon his corpse. This was the fate of an industrious, honest, and most faithful man, of a man who feared no danger, and despised hardships. He was murdered by villains, because he defended the property of his friend; he was mangled by them, to satisfy their hellish spite, dragged by a lasso at a horse's heels away from the houses, and left to be eaten by dogs.

At the beginning of the year 1834, Lieutenant Henry Smith, R.N., was appointed governor of the islands, accompanied with a small party as the nucleus of a future colony. The old settlement at the head of Berkeley Sound was fixed upon as the head quarters. H.M. sloop *Rapid* was now ordered to Port Louis, there to remain until relieved; and she was succeeded in October, 1834, by the *Snake*, Captain Robinson. No occurrence of importance took place in the colony, until on the 23rd of August, 1841, Lieutenant *R. C. Moody*, R.N., was appointed lieutenant governor of the Falkland Islands. He arrived in Port Louis on January 15th, 1842, and relieved Lieutenant Tyssen, commanding H.M. ketch *Sparrow*, and officer in charge of the Falkland Islands.

The energetic governor endeavoured to draw attention to and develop the resources of the Falkland Islands, and the seat of government was removed from Port Louis, at the head of Berkeley Sound, to Stanley Harbour, in Port William; the former, though an excellent and easily reached anchorage, being farther removed from the line of route than was necessary.

The principal recent feature in the account of the Falkland Islands is the occupation of the southern peninsula of East Falkland by a commercial company. In the year 1844 Mr. Samuel F. Lafone, who had been extensively engaged in the hide and cattle trade on the River Plate, after some preliminaries entered into negotiations with Her Majesty's government in 1845, for a contract to purchase the southern portion of the East Falkland, the islands adjacent, and the Beauchêne Island, and the cattle upon the Falklands, upon payment of £10,000 at the period, and £50,000 in ten years, commencing January 1st, 1851. In 1847 this contract was modified by an extension of time, on account of the disturbances arising from the war on the Rio Plata, and a reduction of the payment to £20,000 in ten years from January 1st, 1852, in consequence of the survey having shown that the quantity of land was much less, nearly one half, than the first estimate. This contract having been entered into, the projector entered upon his operations on the southern peninsula, called after his name, *Lafonia*. In May, 1851, a company was formed in London to carry out more fully the scheme of turning the advantages of the islands and their herds of wild cattle to greater account. It was incorporated by royal charter, and purchased Mr. Lafone's interest for £30,000; and subsequently an extension of the term of dominion over the wild cattle was granted until January, 1860. The company's chief locality is at Stanley, but their operations are conducted in different portions of their domain. They have sent out numerous artificers, shepherds, cattle, &c.; and we may anticipate that their operations will confer a lasting benefit upon this hitherto little known British colony.

There is another point of interest connected with the group. It has been proposed, by very many of the writers and others who have interested themselves in the Falkland Islands, that it should form a British convict settlement. Its position and character certainly present some peculiar features for this purpose. But of this it is premature to speak, as the present position of the transportation question is still an open one, and one of very great difficulty.

---

* This gentleman, as commander of the cutter *Beaufoy*, was the friend and companion of the respected Captain Weddell, in his enterprising voyage of 1822—23—24, and was himself eminent for his scientific attainments.

GENERAL DESCRIPTION.—The whole group of the Falkland Islands is deeply and variously indented by sounds, bays, harbours, creeks, and islets; perhaps there is no spot in the whole world so singularly irregular in its coast line, and so full of harbours and creeks as the Falkland Islands. This formation diminishes the area considerably, but at the same time it presents more than counterbalancing advantages.

The area of East Falkland may be roughly computed at about 3,000 square miles; the area of West Falkland may be estimated at about 2,000 square miles; and the whole group, East and West Falkland, with all the surrounding islands, at about 6,000 square miles.

In the appearance of these islands there is very little either remarkable or interesting. About the greater part of the archipelago barren hills, sloping towards low and broken ground, or rocky surf-beat shores, are the only objects which meet the eye. On the West Falkland, and some small islands near it, there are high precipitous cliffs in a few parts exposed to the western seas; but other places, and especially the southern portions of East Falkland, are so low that they cannot be seen from the deck of a vessel 5 miles distant. The average height of the Western Island is greater than that of the Eastern, where they rise from about 1,300 to 2,300 feet above the sea level.

Around the islands, especially toward the south-eastern and north-western extremes, there are numerous islets and rocks, whose distance from shores, where tides run strongly and winds are violent as well as sudden, makes them exceedingly dangerous, more particularly near the N.W. extremity of the group.

EAST FALKLAND.—To M. Louis Vernet, whose name, with respect, has been already noticed, the public are indebted for the following description of the Eastern Island:—*

This island is favourably situated both for colonization and for the refreshment of vessels bound round Cape Horn. Its proximity to the Cape, and its excellent harbours, most of which are of easy access, with good holding ground, and sufficient depth of water for even first-rate men-of-war, would alone make it a valuable possession; whilst the facilities it affords for exercising ships' companies ashore, without the risk of losing them, together with the abundance of wild cattle and anti-scorbutic herbs found there, point it out as a most desirable resort for ships which have been long at sea.

The soil of East Falkland has been found well adapted for cultivation, consisting generally of from 6 to 8 inches of black vegetable mould, below which is either gravel or clay. Wheat and flax were both raised of quality equal, if not superior, to the seed sown, which was procured from Buenos Ayres; and potatoes, cabbages, turnips, and other kinds of vegetables, produced largely, and of excellent quality. Fruit trees were not tried, the plants sent from Buenos Ayres having perished before they arrived.

The soil also produces different kinds of vegetables wild, as celery, cresses, &c., and many other esculent plants, the proper names of which were not known to the settlers, but their palatable flavour and anti-scorbutic properties were abundantly ascertained by them. Among others is one which they called the *tea plant*, growing close to the ground, and producing a berry of the size of a large pea, white, with a tinge of rose colour, and of exquisite flavour. A decoction of its leaves is a good substitute for tea, whence its name. It is very abundant.

No trees grow on the island; but wood for building was obtained, tolerably easily, from the Straits of Magalhaen. For fuel, besides peat and turf, which abound in many places, and may be procured dry out of the penguins' holes, three kinds of bushes are found, called *fachinal*, *matajo*, and *gruillera*. The first of these grows straight, from 2 to 5 feet high, and the stem, in proportion to the height, is from half an inch to 1½ inches in diameter; small woods of this are found in all the valleys, and form good cover; it bears no fruit. The second is more abundant in the southern than in the northern part of the island; its trunk is nearly the thickness of a man's arm, very crooked, never higher than 3 feet, and bears no fruit. The gruillera is the smallest of the three, growing close to the ground, and abundant all over the island; being easily ignited it was used chiefly as fuel, when the people were away from the settlement, and to light the peat fires in the houses. It bears a small dark red berry, of the size of a large pea, and of an insipid taste.

---

* *From a communication* to the Royal Geographical Society, by Sir Woodbine Parish, *F.R.S., 14th January, 1833.*

The country in the northern part of the island is rather mountainous. The highest part was called *San Simon*, 1,600 feet, at no great distance from the bottom of Berkeley Sound.* The tops of the mountains are thickly strown with large boulders, or detached stones, of which quantities have fallen in some places in lines along their sides, *looking like rivers of stones;* these are alternated with extensive tracts of marshy ground, descending from the very tops of the mountains, where many large fresh water ponds are found, from 1 to 2 feet deep. The best ground is at the foot of the mountains, and of this there is abundance fit for cultivation, in plains stretching from 5 to 15 miles along the margin of the sea. In the southern peninsula, since called *Lafonia*, there is hardly a rising ground that can be called a hill. Excellent fresh water is found everywhere, and may be procured either by digging or from the rivulets, which flow from the interior toward the sea, through valleys covered with a rich vegetation.

Of rivers† there are but few in the Falkland Islands. The San Carlos, in East Falkland, is the largest known one; it is very winding, and only about 30 miles in length, navigable for boats to a distance of about 8 miles, and for that distance the width may be averaged at 100 yards.

The sources of the San Carlos appear to be many small streams, draining all the country to the West and S.W. of the western extremity of Port San Salvador, also part of the country to the northward. It is in general a deep stream, with high banks. The bed is of a red sand, gravel, and in spots muddy.

The Arwyo Malo, or Matson River, is another large stream, which drains the long valley, separating the Simon Range from the Wickham Heights. It rises at the foot of Mount Usborne, and running in an easterly direction falls into an arm of Port San Salvador, a distance of 18 miles. It is not navigable; and as it is completely a mountain stream, it often becomes difficult and dangerous to cross, by reason of sudden floods swelling it into a deep and rapid river.

WEST FALKLAND.—The Western Island is divided from the Eastern by Falkland Sound, or rather Strait, a name given by our countryman, Strong, in 1690, and which subsequently became applied to the whole group. The north-western side of the island has been much frequented by whale fishers and sealers, and still continues to be so, though the indiscriminate slaughter of these animals has much reduced their numbers, and rendered the fishery less lucrative than formerly. Their chief rendezvous is at New Island.

From the coast the island appears upon the whole to be more hilly, and the hills to be more rounded, lumpy, and isolated than those in the East Falkland. They appear to possess the same geological character, viz., varieties of quartz rock; and their height may be assumed as varying from 800 to 2,200 feet.

The principal range, the Hornby Hills, is on the eastern side of the island, and runs in a contrary direction to those in East Falkland, its general bearing being North and South, and extending from White Rock Harbour to Fox Bay, parallel to the coast line. Mount Maria, at the back of Port Howard, is 2,270 feet in height. There is also a very remarkable rugged ridge of quartz rock, about 150 feet in height, which rises abruptly from the sea, and follows the coast line from above Port Howard to Fox Bay, a distance of about 40 miles. Between this ridge and the range of hills is a longitudinal valley, intersected occasionally by high land (the roots of the range).

The North coast of West Falkland consists of long islands extending East and West, with narrow openings between them, of which Tamar Pass and the entrance to Port Egmont are the most remarkable. Upon these islands are isolated hills, of conical and lumpy forms, rising abruptly from gently undulating ground. The islands further to the westward, called the Jasons, are hills of this abrupt character, and from 800 to 1,200 feet in height.

---

* A chain of very rugged topped mountains, called the *Wickham Heights*, extends due East and West from Port William to Port Sussex, nearly across the northern portion of the island, to the southward of Mount St. Simon above mentioned. The height of this range varies from 1,400 to 2,300 feet (increasing towards the West side); and as the quartz rock crops out nearly vertical, and with great irregularity, this range can only be crossed at certain places, which constitutes a feature of some importance in relation to the drives of cattle. The contrast between the country North and South of the Wickham Heights is very remarkable.

† From the report of Lieutenant-governor Moody, April, 1843, p. 20.

The West coast of West Falkland, until the recent survey, was not much known, except to whalers and sealers. It is more variously and deeply indented by the sea than even the coasts of East Ealkland. The hills on the South coast of West Falkland appear to be in masses, and their termination at the coast line to be in lofty rugged cliffs. There is a river, the Chartres River, about the same size as the San Carlos in East Falkland, which falls into King George's Bay. Rivers, however, can scarcely be needed in a country so fully and variously indented by the sea as these islands are. For the purpose of fresh water, the want of rivers is amply supplied over the whole country by many small fresh water lakes or ponds, varying in size from 30 yards to 3 or 4 miles in circumference, and by innumerable springs and rivulets.

PRODUCTIONS, &c.—One of the most remarkable of the plants that grow on the Falklands is the Tussac; it is a gigantic sedgy grass; the average length of the blade is 7 feet, and of the stalks 4 to 6 feet. The plants grow in bunches close together, and as many as 250 roots spring from one bunch. In old plants the decayed roots of successive shoots form a cushion of dry entangled fibres, which raise the bunch from the ground. This cushion sometimes attains to a great size and height, 6 or 7 feet, and 4 or 5 feet in diameter, so that a person standing in a patch of old tussac may be quite sheltered or concealed. It grows with great luxuriance on the coasts, down to high water mark; and cattle and horses feed on it with the greatest avidity, and speedily become fat. About 3 or 4 inches of the roots are very agreeable to man, being crisp and of a nutty flavour, and was the food of two Americans who were upon the Western Island for fourteen months. It is an exceedingly valuable plant to the colony. The grass, growing in large tufts upon the high base of decayed roots, resembles at a distance a diminutive grove of thickly clustered palms; and from the dark green and luxuriant appearance given to the smaller islands clothed with tussac, the richness of tropical vegetation is forcibly recalled to the memory.

There are no trees, but there are some small bushes before mentioned, which are used as fuel, and a few vegetables.

The large round gum plant, common in Patagonia, &c., is abundantly found, and when dried, is useful for kindling fires, being extremely combustible. A gum exudes from it, which is called "balsam," and is used as a curative. The Gauchos, when in the interior of the islands, tear it asunder, set it on fire, and roast their beef before it.

Peat is abundant, and may be easily procured for firing.

The greatest riches of the Falkland Islands are its herds of wild cattle and horses, the descendants of those landed by the French colonists of De Bougainville, in 1764. The wild cattle are estimated at 40,000, and roam in herds over the Eastern Island. They are of several breeds, and one half of this number are bulls, who live apart from the rest, and herd in parties of three or four together. They are noble animals, but very wild and fierce, and will attack a single person. These wild cattle are caught and brought to the settlement by the Gauchos, mounted on horses brought from Buenos Ayres, and trained to the use of the lasso. The hides of the bulls weigh from 70 to 80 pounds, and the animal itself is fine in proportion.

The wild horses are of an inferior breed, although serviceable when caught and trained; but they have not the stamina sufficient for the purpose of hunting the wild cattle. Their numbers are estimated at 3,000. They are also upon the Eastern Island; and it is a curious fact, that they have never left the eastern end of the island, although there is no natural boundary to prevent them roaming, and that part of the island is not more tempting than the rest.

The rabbit is another animal which has been introduced, and has succeeded very well; so that they abound over large parts of the island. Yet, like the horses, they are confined within certain limits; for they have not crossed the central chain of hills.

The only native quadruped is a large wolf-like fox, which is common to both islands; they are very fearless, but perhaps are not dangerous.

On Speedwell Island, on the S.W. extremity of East Falkland, are some wild pigs, estimated at 500 in number.

Game is extremely common, especially wild geese and ducks; of the former, two kinds were distinguished, the lowland or kelp geese, and the upland geese; the latter were much superior in flavour, the former being of a fishy taste, living chiefly on mussels, shrimps, and kelp. Both were very tame, and the upland geese were easily domesticated. They are finest for eating in autumn, being then fattest, in consequence of the abundance, at that season, of tea berries, of which they are very fond; the rest of the year they live on the short grass. The lowland gander is white; the goose dark, with a speckled breast, as described hereafter.

Of ducks there are several kinds. The logger headed are the largest, and almost of the size of the geese; their flesh is tough and fishy; they cannot fly, and when cut off from the water are easily caught. The next size is also of inferior quality, tough and fishy; but the smaller kinds, which are not larger than young pigeons, are deliciously good, and are found in large flocks along the rivulets and fresh water ponds. Snipes are found so tame that they are often killed by throwing ramrods at them. In addition to these, a great variety of sea birds frequent the shores; of which the most valuable to sailors and settlers, from the quantity of eggs they deposit, are the gulls and penguins. These birds have their fixed rookeries, to which they resort, in numerous flocks, every spring; the gulls generally in green places near the shore, or on the small islands in the bays; the penguins chiefly along the steep shores of the sea. The eggs of both are eatable, even with relish, after long confinement on board ship; the penguins' being, however, the best, and less strong than that of the gull. So numerous are these eggs, that on one occasion eight men gathered 60,000 in four or five days, and could easily have doubled that number had they stopped a few days longer. Both gulls and penguins will lay six or eight each, if removed; otherwise, they lay only two, and hatch them. The gulls come first to their hatching places, the penguins a little later.

Fish abound in all the bays and inlets, especially in spring, when they come to spawn at the mouths of the fresh water rivulets. They generally enter and retire twice every day, at half flood and half ebb; and are in such numbers, that ten or twelve men could always catch and salt about sixty tons in less than a month. They were usually caught by a sweeping net, but they also took the hook, being of a kind between the mullet and salmon. Their flavour was excellent; and when salted they were considered superior to the cod: many ship loads might be procured annually.

Of shell fish there are only mussels and clams; they are very abundant, and easily gathered on the beach at low water.

PENGUINS and SEA FOWL.—According to the descriptions of Captain Morrell, there are *four* species of penguin on the Falkland Islands, the three which we have noticed on page 38, and another, which he calls the *Rookery Penguin.* They all walk upright; and when fifty or more are moving in file, they appear at a distance like a company of juvenile soldiers, or the children of a church choir in their habits. This feathered animal may be said to combine the qualities of men, fishes, and fowls; upright like the first; their wings and feet acting the part of fins, like the second; and furnished with bills and feathers, like the third. Their gait on land, however, is very awkward; more so than that of a Jack tar just landed from a long voyage; their legs not being much better adapted for walking than their wings for flying.

The next most remarkable bird to be found on these shores is the *Albatross*, the penguin's associate and most intimate friend. This is one of the largest and most formidable of the South Sea birds, being of the gull kind, and taking its prey upon the wing. Like many other oceanic birds, the albatross never comes on land unless for the purpose of breeding, when the attachment that exists between it and the penguin is evinced in many remarkable instances; indeed, it seems as firm as any that can be formed by the sincerest. Their nests are constructed with great uniformity near to each other; that of the albatross being always in the centre of a little square formed by the nests of four penguins.

The *Upland Goose* is about the size of our domestic geese. It is very palatable when cooked, being sweet, tender, and juicy. The plumage is rich and glossy; that of the gander a dazzling white; his bill being short and black, and his feet yellow. The edges of the feathers which cover his breast and neck are black. The down is nearly equal to that of the swan, and would make beautiful trimming for ladies' dresses: but the down of the albatross is superior to anything of the kind that I have ever seen; though that of the shag approaches the nearest to it in quality. If any method could be invented to divest it of that disagreeable fishy odour peculiar to all oceanic birds, it would be the most valuable down ever brought to this country.

The *Teal* is likewise found here, and of surpassing beauty. Their bills and feet are blue; the wings of a golden green; and the plumage of their bodies more shining than that of the pintado. The ducks are similar to those of our own country, The goose, called the *Lowland Goose*, somewhat resembles our tame geese. The males are of a variegated hue, a kind of mixture of white and dark gray, chiefly white. The females are mostly gray. They are not quite so large as our domestic geese; and as they feed on shell fish and rock kelp, their flesh has a very unpleasant flavour.

By a *rookery*, the navigators of the Southern Seas mean a breeding encampment of oceanic animals, such as penguins, seals, &c., or a spot selected for the purpose of bringing forth and rearing their young. Here they unite in vast numbers, and display, in the construction, great ingenuity and industry. When a sufficient number assemble on the shore, they appear to consult on, and forthwith execute, the grand purpose for which they have left their favourite element. In the first place they carefully select a level piece of ground, of suitable extent, often comprising four or five acres, and as near the water as practicable; always preferring that which is the least encumbered with stones and other hard substances, with which it would be dangerous to have their eggs come in contact. So soon as they are satisfied on this point, they proceed to lay out the plan of their projected encampment; which task they begin by tracing a well defined parallelogram, of sufficient magnitude to accommodate the whole fraternity—say from one to five acres. One side of this square runs parallel with the water's edge, and is always left open for egress and regress; the other three sides are differently arranged.

These industrious feathered labourers next proceed to clear all the ground within the square from obstructions of every kind; picking up the stones in their bills, and carefully depositing them outside of the lines before mentioned, until they sometimes, by this means, create quite a little wall on three sides of the rookery. Within this range of stones and rubbish they form a pathway, 6 or 8 feet in width, and as smooth as any of the paved or gravelled walks in the New York Park, or on the Battery. This path is for a general promenade by day, and for the sentinels to patrol at night.

Having thus finished their little works of defence on the three land sides, they next lay out the whole area in little squares of equal sizes, formed by narrow paths which cross each other at right angles, and which are also made very smooth. At each intersection of these paths an albatross constructs her nest, while in the centre of each little square is a penguin's nest: so that each albatross is surrounded by four penguins; and each penguin has an albatross for its neighbour in four directions. In this regular manner is the whole area occupied by these feathered sojourners of different species; leaving, at convenient distances, accommodations for some other kinds of oceanic birds, such as the shag, or green cormorant, and another, which the seamen call the Nelly.

Although the penguin and the albatross are on such intimate terms, and appear to be so affectionately and sincerely attached to each other, they not only form their nests in a very different manner, but the penguin will even rob her friend's nest whenever she has an opportunity. The penguin's nest is merely a slight excavation in the earth, just deep enough to prevent her single egg rolling from its primitive position; while the albatross throws up a little mound of earth, grass, and shells, eight or ten inches high, and about the size of a water bucket, on the summit of which she forms her nest, and thus *looks down* upon her nearest neighbours and best friends.

None of the nests in these rookeries are ever left unoccupied for a single moment, until the eggs are hatched and the young ones old enough to take care of themselves. The male goes to sea in search of food until his hunger is appeased; he then promptly returns and affectionately takes the place of his mate, while she resorts to the same element for the like purpose. In the interchange of these kind offices they so contrive it as not to leave the eggs uncovered at all; the present incumbent (say the female) making room for the partner of her cares and pleasures on his return from the sea, while he nestles in by her side until the eggs are covered by his feathers. By this precaution they prevent their eggs being stolen by the other birds, which would be the case were they left exposed; for the females are so ambitious of producing a large family at once, that they rob each other whenever they have an opportunity. Similar depredations are also committed by a bird called the rook, which is equally mischievous as the monkey. The royal penguin is generally foremost in felonies of this description, and never neglects an opportunity of *robbing a neighbour.* Indeed, it often happens that when the period of incubation is *terminated, the young brood* will consist of three or four different kinds of birds in one nest. This is strong circumstantial evidence that the parent bird is not more honest than her neighbours.

To stand at a little distance, and observe the movements of the birds in these rookeries, is not only amusing, but edifying, and even affecting. The spectacle is truly worthy the contemplation of a philosophic mind. You will see them marching round the encampment in the outside path, or public promenade, in pairs, or in squads of four, six, or eight, forcibly reminding you of officers and subalterns on a parade day. At the same time the camp, or rookery, is in continual motion; some penguins passing through the different paths, or alleys, on their return from an aquatic excursion, eager to caress their mates after a temporary absence; while the latter are passing out, in their turn, in quest of refreshment and recreation. At the same time the air is almost darkened by an immense number of the albatross hovering over the rookery like a dense cloud; some continually alighting and meeting their companions, while others are constantly rising and shaping their course for the sea.

To see these creatures of the ocean so faithfully discharge the various duties assigned them by the great Creator; to witness their affectionate meetings after a short absence on their natural element; to observe their numerous little acts of tenderness and courtesy to each other;—all this, and much more that might be mentioned, is truly interesting and affecting to the contemplative and sympathetic spectator.—*Morrell's Voyages*, pp. 50—53.

A curious representation of a group of penguins is given by Mr. Webster in his first volume, page 118. This gentleman observes, that they generally live at sea, except in the spring, and during the time of incubation, and when they moult in autumn. He has seen them at 200 miles from land, swimming with the rapidity of the dolphin, the swiftest of fishes. They come up to the surface every two or three minutes for fresh breath; make a croaking noise; dipping their beaks frequently into the water, and playing and diving about near the surface, like the bonita.

The hair and fur seals, which were formerly so abundant in these islands, have decreased considerably in number, in consequence of the wanton destruction at all times of the year when they can be met with; neither old seals nor pups are spared by the sealers. The hair seals are the most numerous; and although their skin is not of great value, yet, combined with their oil, which is of very good quality, the taking of them may still yield a good return.

The common or black whale are still numerous in the vicinity of the Falklands, particularly upon the West coast of West Falkland, and vessels from New Island, the present rendezvous of many whalers, can be upon a good fishing ground in a few hours.*

WINDS, CLIMATE, &c.—In a former portion of the work we gave a general description of the climate of these islands. The following remarks will be found important in connexion with those previously given. The first are by Captain FitzRoy (Vol. II., p. 243):—

Wind is the principal evil at the Falklands; a region more exposed to storms, both in the summer and winter, it would be difficult to mention.

The winds are variable; seldom at rest while the sun is above the horizon, and very violent at times; during the summer, a calm day is an extraordinary event. Generally speaking, the nights are less windy than the days; but neither by night nor by day, nor at any season of the year, are these islands exempt from sudden and very severe squalls; or from the gales which blow heavily, though they do not usually last many hours.

It has been stated by Bougainville and others, that in summer the wind freshens as the sun rises, and dies away about sunset; also the nights are clear and starlight. The information I have received, with what I have myself witnessed, induces me to agree with the first of these statements in its most general sense, and to a certain degree I can admit the second; but, at the same time, it is true that there are many cloudy and very windy nights in the course of each year, and I might almost say month. The *Magellan* was driven from her anchors, though close to a weather shore, in the narrowest part of

---

* There are but few, if any, British ships engaged in the whale fishery round these islands; but the fact of the black whale being plentiful is well known and appreciated by many foreign vessels, who pursue their occupation with great secresy and success.—*Report of Governor Moody*, p. 27.

Berkeley Sound, and totally wrecked in Johnson Harbour, about midnight on the 12th of January, 1833.

The prevalent direction of the wind is westerly. Gales, in general, commence in the north-west, and draw or fly round to the south-west; and it may be remarked, that when rain accompanies a north-west wind, it soon shifts into the south-west quarter, and blows hard.

Northerly winds bring cloudy weather; and, when very light, are often accompanied by a thick fog; it is also worthy of notice that they almost always occur about the full and change of the moon.

North-east and northerly winds bring gloomy overcast weather, with much rain; sometimes they blow hard and hang in the N.N.E., but it is more common for them to draw round to the westward. South-easterly winds also bring much rain; they are not frequent, but they blow hard, and as the gale increases it hauls southward. During winter the winds are chiefly from the north-west, and in summer they are more frequently south-west. Though fogs occur with light easterly or northerly winds, they do not often last through the day.

Gales of wind, as well as squalls, are more sudden, and blow more furiously from the southern quarter, between south-west and south-east, than from other directions.

Wind from the East is rarely lasting or strong; it generally brings fine weather, and may be expected in April, May, June, and July, rather than at other times; but the intervals of fine weather (short indeed), with light breezes from E.S.E. to E.N.E., occur occasionally throughout the year.

Neither lightning nor thunder are at all common; but when the former occurs, easterly winds are expected to follow. If lightning should be seen in the south-east, while the barometer is low, a hard gale from that quarter may be expected. South-east and southerly gales last longer than those from the westward, and they throw a very heavy sea upon the southern shores. In the winter, generally, there is not so much wind as in the summer; and in the former season the weather, though colder, is more settled and considerably drier. In different years seasons vary so much, that those who have been longest about the islands hardly venture to predict what weather will be found during any particular month. All they say is, that January, February, and March, though warmest, are the windiest months; and that May, June, and July, though cold, are much less stormy.

I must here add one word in favour of the barometer, or sympiesometer. Every material change in the weather is foretold by these invaluable instruments, if their movements are tolerably understood by those who consult them, and if they are frequently observed. Mr Low said to me, "The barometer is worth anything in these countries" (alluding to Tierra del Fuego, as well as the Falklands); "some say they dislike it because it is always so low, and foretelling bad weather; but how often do we have any other?" They must somehow think the barometer ominous, and overlook the use of the omen.

The temperature may be considered equable; it is never hot, neither is it ever very cold; but the average is low; and in consequence of frequent rain and wind, a really moderate degree of cold is much more noticed than would probably be the case if the weather were dry and serene.

Thus far Captain FitzRoy; in addition to this, we give the experience of Lieut.-governor Moody, as stated in his report to the Colonial Secretary, April, 1842, p. 22. The temperature is more equable than in England, seldom rising to the same heat in summer, nor falling so low in winter; it ranges from 30° to 50° in winter, and from 45° to 70° in summer; but during the past summer (which, by the united testimony of every person in the settlement, has been an unusually inclement one) the temperature only once reached 70°, and was seldom above 65°.

In Captain FitzRoy's work it is stated that the temperature has been known to be as low as 22° in winter, and as high as 80° in summer. The logbook of the settlement shows the temperature to have been as low as 18° one night during last winter. There are conflicting opinions about the temperature, and, as much depends upon the position of the thermometer, and the regularity of the observations, I cannot give an opinion as to which is the most accurate. My own observations will be the mean of five thermometers, but the position of the house is elevated and exposed.

There is but little ice or snow in the winter; the first seldom exceeds half an inch in thickness, excepting in very severe winters; the latter is rarely more than ankle deep, and remains a very short time upon the lower lands. There is very little foggy weather, and thunder and lightning are extremely rare.

Light passing showers are frequent, but a day of constant rain seldom happens. The total amount of rain which falls in the year is probably less than in England, certainly not more.

The prevailing direction of the wind at the Falkland Islands is from the West. From its almost daily occurrence and frequency from one quarter, it may be compared to the regular breezes in tropical climates; like them also it generally commences at nine, blows strong, often amounting to a gale through the day, and dies away at four or five in the afternoon. The nights are generally calm, and the contrast of the bright still early mornings and calm evenings with the storm midday is very great; so frequently is this the case, that I arrange my working parties, at least those connected with the water, accordingly. I have, however, seen many days perfectly calm and serene throughout, during a residence of three months, and in a summer admitted by every one to have been unusually bad. It is also true that there have been many nights and days stormy throughout.

I have before me two accounts of the direction of the winds at different times of the year, and the kind of weather accompanying them. The two accounts are diametrically opposed to one another, and from the opportunities possessed by the observers, as well as their character, both are entitled to be considered as correct. At present, therefore, I cannot offer further information upon this head, than that the prevailing wind is from the north-west to the south-west, and very seldom easterly; that northerly winds bring gloomy wet weather; and that hard gales may be expected from the south-east to the south-west, but that they are generally over within 24 hours. Both accounts agree in stating that there is more wind in summer than in winter.

The following important meteorological summary, which has been kindly furnished us by Mr. T. Havers, the indefatigable secretary of the Falkland Islands' Company, will be of the greatest service to the visitor. It will be seen that westerly winds here have almost the constancy of the trade winds of the tropical zones, and the observations entirely accord with the previously given conclusions.

Temperature and prevailing winds at the Falklands, from observations made at Port Stanley, from the 21st of July, 1851, to the 31st of July, 1852. The thermometer was hung in the shade, on a wall, having an eastern aspect, and the temperature noted was the average of three observations each day:—

The wind was marked for the quarter it had blown most from during each 24 hours. The weather table contains an accurate description of the state of the atmospheric phenomena each day.

Winter season, comprising May, June, July, August. In May, corresponding to November in England, highest temperature, 47°, lowest, 30°, mean, 41°; wind, S.W., sixteen days; weather mostly fine and sunny, with a few squalls of snow and hail, and one or two night frosts. Nine days N.W., fine clear weather, but blowing hard, sometimes quite a gale, accompanied by rain. Five days N.E., if calm, light mists, otherwise a gale of wind.

In June, corresponding to December, highest temperature, 46°, lowest, 29°, mean, 38°; wind, West to North, fifteen days misty and blowing, with calm and fine weather. Twelve days South to West, clear and frosty, and blowing squalls, with snow. Three days North to East, dull, blowing hard, with thick rain.

In July, corresponding to January, temperature, highest, 38°, lowest, 23°, mean, 33°. Wind, thirteen days West to North, mostly calm, alternate falls of snow and dull thaws. Eleven days South to West, fine frosty light winds, and falls of snow. Four days North to East, blowing hard, with rain, and thawing fast. Three days East to South, snow squall and dull, with heavy falls of snow.

In August, corresponding to February, highest temperature, 42°, lowest, 32°, mean, 37°. Wind for twenty-two days N.W., weather mostly fine, mild, and sunny, with some rain, and a few gales. Seven days S.W., misty, sleet and snow, but light winds. Some snow remaining on the tops of the hills.

Spring season—September and October. In September, corresponding to March, highest temperature, 48°, lowest, 33°, mean, 42°. Wind, sixteen days N.W., most fine blowing weather. Twelve days S.W., squally, sleet, snow, sunshine, and rain. In October, corresponding to April, highest temperature, 64°, lowest, 32°, mean, 45°. Wind, twenty-one days West to North; mostly fine, sunshiny, blowing weather, with calms and rain. Nine days South to West, very fine, with occasional snow squalls. On the 25th, thunder. Wind, S.S.E., temperature, 64°.

Summer season—November, December, January, February.

In November, corresponding to May, highest temperature, 61°, lowest, 38°, mean, 51°. Wind, fourteen days West to North, seven days North to East, five days South to West, and four days East to South. Weather, generally very fine and calm; some dull and close days; a heavy snow storm on the 12th; temperature, 38°.

In December, corresponding to June, highest temperature, 60°, lowest, 38°, mean, 50°. Wind, eleven days South to West, ten days West to North, seven days East to South, and two days North to East. Weather changeable; three thunder storms, one very heavy; temperature, 58°; mostly dull and heavy, with a good deal of rain, and some gales of wind.

In January, corresponding to July, highest temperature, 66°, lowest, 40°, mean, 56°. Wind, ten days South to West, nine days West to North, seven days East to South, and three days North to East. Weather, fine, clear, and fresh, two thunder storms, two snow and hail squalls, and some dull, heavy, rainy days, with a few heavy gales.

In February, corresponding to August, highest temperature, 63°, lowest, 42°, mean, 55°. Wind, sixteen days S.W. Some very fine weather, but hardly a day without rain and snow squalls. Nine days N.W., misty, changeable, and blowing weather.

Autumn season—March and April. In March, corresponding to September, highest temperature, 68°, lowest, 41°, mean, 55°. Wind, thirteen days South to West, twelve days N.W. Weather, generally fine, some cloudy days, and on most a few hours of squally mist or rain. In April, corresponding to October, highest temperature, 63°, lowest, 34°, mean, 46°. Wind, sixteen days South to West. Weather, fine, showery, calm, and some squalls. Ten days N.W., fine, but blowing gales of wind. Three days S.E., calm and fine, with snow.

		Temperature.			Prevailing winds.	
		highest.	lowest.	mean.	days.	days.
		°	°	°		
Winter.	May	47	30	41	16 S.W.	9 N.W.
	June	46	29	38	12 S.W.	15 N.W.
	July	38	23	33	11 S.W.	13 N.W.
	Aug.	42	32	37	7 S.W.	22 N.W.
Spring.	Sept.	48	33	42	12 S.W.	16 N.W.
	Oct.	64	32	45	9 S.W.	21 N.W.
Summer.	Nov.	61	38	51	variable	14 N.W.
	Dec.	60	38	50	11 S.W.	10 N.W.
	Jan.	66	40	56	10 S.W. 7 S.E.	9 N.W.
	Feb.	63	42	55	16 S.W.	9 N.W.
Autumn.	March	68	41	55	13 S.W.	12 N.W.
	April	63	44	46	16 S.W.	10 N.W.

The north-west wind brings the highest temperature, and is the prevailing wind during six months of the year.

SEA WEED, or KELP, as an indication of shoal water, is invaluable in these parts, and is therefore strictly to be noticed by the navigator. Capt. FitzRoy says—"In approaching the land, and especially while entering a harbour, a careful lookout should be kept for 'fixed kelp;' the seaweed growing on every rock on those places, which is covered by the sea, and not far beneath its surface. Lying upon the water, the upper leaves and stalks show, almost as well as a buoy, where there is a posssibility of hidden danger.*

---

* The dangerous nature of kelp may be understood by the following remarks of Captain King in his Directions for the Straits of Magalhaen.

"With daylight and clear weather a vessel may close the shore without risk, because the water is invariably deep, and no rock is found which is not so marked by seaweed (or *kelp*, as *it is generally called*), that, by a good lookout at the mast-head, its situation is as clearly seen

Long stems, with leaves, lying regularly along the surface of the sea, are generally attached to rocky places, or else to large stones. Occasionally a few straggling stalks of kelp are seen in deep water, even in 30 fathoms; many of which are attached to stones, and so firmly, that their long stems will sometimes weigh the stone adhering to the roots. Such scattered plants as these need not be minded by a ship; but in passing to windward of patches or beds of kelp, or rather in passing on that side from which the stems stream away with the current, care should be taken to give the place a wide berth; because the only part which shows, when the tide is strong, lies on one side of, not over, the rocks. Where the stream of tide is very strong, this kelp is quite 'run under,' or kept down out of sight, and can no longer be depended on as a warning. When a clear spot is seen in the middle of a thick patch of fixed kelp, one may expect to find the least water.

" Drift kelp, or that which is floating on the surface of the sea, unattached to any rock or stone, of course need not be avoided; it may be known at a glance by the irregular, huddled look which it has."—*Narrative, &c.*, Vol. II., p. 246.

Mr. Darwin, in the third volume of the same work (p. 303), remarks, "There is one marine production which, from its importance, is worthy of a particular history. It is the kelp, or *Fucus giganteus* of Solander. This weed grows on every rock, from low water mark to a great depth, both on the outer coast and within the channels. I believe, during the voyages of the *Adventure* and *Beagle*, not one rock near the surface was discovered, which was not buoyed by this floating weed. The good service it thus affords to vessels navigating near this stormy land is evident; and it certainly has saved many a one from being wrecked. I know few things more surprising than to see this plant growing and flourishing amidst those great breakers of the Western Ocean, which no mass of rock, let it be ever so hard, can long resist. The stem is round, slimy, and smooth, and seldom has a diameter of so much as an inch. A few taken together are sufficiently strong to support the weight of the large loose stones to which in the inland channels they grow attached; and some of these stones are so heavy, that when drawn to the surface, they can scarcely be lifted into a boat by one person."

Captain Cook, in his second voyage, says, that at Kerguelen Land "some of this weed is of a most enormous length, though the stem is not much thicker than a man's thumb. I have mentioned that upon some of the shoals upon which it grows, we did not strike ground with a line of 24 fathoms. The depth of water must, therefore, have been greater. And as this weed does not grow in a perpendicular direction, but makes a very acute angle with the bottom, and much of it afterwards spreads many fathoms on the surface of the sea, I am warranted to say that some of it grows to the length of 60 fathoms and upwards." Certainly at the Falkland Islands, and about Tierra del Fuego, extensive beds frequently spring up from 10 and 15 fathoms water. I do not suppose any other plant attains so great a length as 360 feet, as stated by Captain Cook. Its geographical range is very considerable: it is found from the extreme southern islets near Cape Horn, as far North, on the eastern coast, as lat. 43°; and on the western it was tolerably abundant, but far from luxuriant, at Chiloe, in lat. 42°. It may possibly extend a little farther northward, but is soon succeeded by a different species. We thus have a range of 15° of latitude; and as Cook, who must have been well acquainted with the species, found it at Kerguelen Land, no less than 140° in longitude.

DESCRIPTION OF THE COASTS.

EAST FALKLAND.

BERKELEY SOUND is situated at the north-eastern extremity of the group. Governor Moody marked out the plan of a town, to be called "ANSON," after the great

---

as if it were buoyed. By avoiding kelp, you are sure of having sufficient water for the largest ships on any part of this coast. At the same time it must be remembered that kelp grows in some places from a depth of 30 fathoms, and that, on many parts of this coast, you may pass through thick beds of seaweed without having less than 6 fathoms of water. Still it is always a sign of danger, and until the spot where it grows has been carefully sounded, it is not safe to pass over it in a ship. As an instance;—after sounding a large bed of this weed in one of the *Beagle's* boats, and thinking it might be passed in safety, a rock was found, not more than 4 feet in diameter, having only 1 fathom over it. Kelp is, therefore, always to be avoided."

circumnavigator; but after much deliberation it has been determined to have the principal settlement at *Port William*, lying adjoining to and southward of Berkeley Sound, the objection to which is the difficulty which vessels find in beating to windward through the Sound up to Port Louis. The greater advantages of Port William, as a port and refuge for large vessels, have led to this determination, although the land is less adapted for colonization; but this is perhaps subordinate to the consideration of the facility of supplying shipping.

BERKELEY SOUND is the *Puerto de la Soledad* of the Spaniards, and the *Acarron Bay* of the French. It was at the N.W. part of this harbour that the latter, under M. de Bougainville, had their settlement in 1764, as already noticed. It may be taken as limited by Eagle Point or Volunteer Point on the North, and Kidney Island or William Point on the South. It is 4 miles wide at the entrance, and upwards of 5 leagues in length, terminating in the three excellent anchorages of Johnson Harbour, Stag Road, and Port Louis. Berkeley Sound was considered to be the only place on the East coast that could be entered at night, if the entrance had been made out before. It might even be worked into safely, nearly as far as Johnson Harbour. However, the lighthouse and beacon at Port William, presently alluded to, will facilitate the entrance to that now the principal port.

The settlement of Port Louis is securely situated along the edges of a small bay, which has a narrow entrance into it out of the Sound; this entrance, in the time of the Spaniards, was commanded by two forts, both now lying in ruins.

.The buildings constructed by the Spaniards were remarkable for their thick walls of stone. They are very straggling, covering a space of half a mile in length, and a quarter of a mile in breadth. Among them are the remains of one used as a church, and another as a hospital.

Off the N.E. point of the Sound is a ledge, above water, called the *Volunteer Rocks;* and N.E. by E. about three-quarters of a mile from the point is the sunken rock upon which the *Uranie*, French frigate, so unfortunately struck in February, 1820.* This rock is the more dangerous, as with westerly winds the sea seldom breaks on it, and it is the only rock of the whole group on which kelp does not grow. The best marks to clear it, particularly in the night, are to keep Cape Carysfort to the eastward of W.N.W. until Mount Low bears S.S.W. ½ W.; a vessel will then pass nearly 2 miles outside of it, and may then haul up for *Mount Low*, which is the most eastern high hill on the island, and may be easily seen, on a clear night, when to the northward of Volunteer Point; the summit, which is 840 feet high, forms two peaks, and from the eastern one the land slopes down to the point which separates Berkeley Sound from Port William.

When these rocks are cleared, and the Sound is fairly entered, there is no danger, except from a small ledge of rocks off Eagle Point, about 2 cables' length from the shore, with kelp growing all over it, and therefore easily seen. Above this point the Sound is quite clear till well up, when a ledge of five or six black rocks will be seen on the North side, behind which is an excellent harbour, called *Johnson's Harbour*, with good holding ground in 6 or 7 fathoms, and greater convenience for watering than in any other part of the bay.

CAPE PEMBROKE is the easternmost extremity of the Falkland Islands, and the southern side of the entrance of Port William, in which is Stanley, the present seat of government. Cape Pembroke has now a spar beacon 36 feet high, with a base of 9 feet feet square tapering to 5 feet, and above all a mast of 30 feet, and is distinctly visible at the distance of 10 miles. This beacon, on the erection of the lighthouse, is to be removed to William Point, the North point of the entrance.

The LIGHTHOUSE, which is about to be erected at Cape Pembroke, is an iron structure, constructed in London by Messrs. Grissell, 60 feet high, with a reflector apparatus by Mr. Wilkins. The light will be a *fixed* light, visible around three-fourths of the horizon. The fabric was completed in London in October, 1853.

PORT WILLIAM is immediately to the South of Berkeley Sound, the former principal port. The entrance to it cannot be well made out till near the land, but the before mentioned lighthouse and beacon will materially alter this. With a fair wind, and coming from the northward, after rounding Volunteer Point, Mount Low should be kept about a point on the starboard bow; some white sand hills will then be seen ahead, and close to Kidney Island; at the same time the *Seal Rocks*, which form the extreme of the South entrance to Port William, will be seen on the horizon, just open of Cape Pembroke, and about two points on the port bow. By continuing on this course till within a mile of Kidney Island (which can be approached in safety to within a quarter of a mile) the northern point of the entrance to Port William, *William Point*, will be made out clearly: it is low and rocky, and has tussac growing on it, which has the appearance of low green bushes, and is easily distinguished from the rest of the land. It will also be marked by a spar beacon. This point may be passed within a cable's length, and the entrance to the harbour will be seen bearing S.W. The port is entered after passing William Point, and there is good anchorage in the bay, between it and Cape Pembroke, in from 11 to 12 fathoms, sheltered from all the prevailing winds. The next point is *Charles Point*, about 2 miles further: it has two small detached rocks at its extremity, off which there is a kelp patch, close to the edge of which is deep water. *Yorke Point*, on the South side of the harbour, and the islets to the East of it, are all steep; the entrance is wide enough for a line of battle ship to work in, and the edge of the kelp is a secure guide: but the white sandy bay on the South side should not be entered, as it is shallow. In standing towards it a vessel should tack when in the line of the islets and of Yorke Point. Immediately the point is passed, Sparrow Cove will be seen open on the North side of the harbour, under Mount Low, and the entrance of Stanley Harbour on the South side. Above Port William anchorage, a long creek winds through the hills to the West up to Murrell River; its whole extent being about 3½ miles. The landing on all the beaches is bad, in consequence of the scattered fragments of quartz rock, from 1 to 3 feet long, which will greatly injure a boat if she touches them: the only safe landing is on the rocks, where they are steep-to. There is a very good watering place on the West side of the cove, on the North shore, in a bight outside the entrance to Weir Creek; but care must be taken in landing, on account of the stones. Water and peat abundant. Vessels that remain in Port William will find good anchorage in Sparrow Cove, and an unfailing supply of good water in its N.W. corner. In Port Harriet, South of it, there is a good stream in a cove on the North shore, about a mile inside the entrance.

---

* *Of the Uranie all the stores and papers were happily saved, and no life was lost.*

STANLEY HARBOUR, the seat of the government, is on the South side of Port William. It is now provided with many advantages for the refitment and refreshment of passing vessels. A *patent slip* is to be erected, and in operation forthwith, of no small importance to shipping in this otherwise distant and tempestuous region. The greatest drawback was the want of running water near the settlement, but this has been obviated by the present active governor, who has caused several wells to be sunk, and a reservoir is also construçted, so that all vessels can now depend on a ready supply. The price of 20 tuns of water is five shillings, and a shilling per tun for any extra quantity. Good and cheap beef may be obtained in any quantity, and wild fowl and fish are also very abundant.

Wood cannot be had, but *peat*, which is a fair and pleasant substitute for it, is plentiful, and when compressed, is found to be a valuable fuel.

If the wind is southerly, the passage into Stanley Harbour should not be attempted, except by a small quick working vessel; but with the wind to the northward of S.W., it may be passed by the largest ships: it is little more than a cable's length broad, but both points can be passed within 30 yards. If the wind is S.W. so as to make it necessary to pass very close to the western or *Navy Point* to fetch through, a vessel should work up well to windward of the entrance, and entering under all sail and with good way on, directly the sails lift from the wind drawing out in passing the point, she should be kept a little higher, so as to shoot through with the sails shaking till she gets the steady wind inside the point. When inside the Narrows, the harbour may be traversed by any vessel under the size of a line of battle ship: there are 3½ fathoms a cable's length from the kelp on each side, and above 4 fathoms in mid-channel, close up to the town, which is about 2 miles to the westward of the entrance, on the South shore. The largest ships have plenty of room to round to and anchor in mid-channel, in about 15 fathoms, as far up as they choose to fetch. After passing the Narrows the bottom is excellent, a stiff mud, which often causes some trouble in getting the anchor up again.

Ships bound round Cape Horn should not enter Stanley Harbour, as the wind, which would be fair for them to sail, would be foul for getting through the Narrows. They may anchor outside the entrance, about a quarter of a mile N.W. of them. Vessels coming from Cape Horn might always go into Stanley Harbour, as any wind which would be fair for them to sail, if bound to the northward, would also be fair to leave the harbour. Large ships, when abreast of the entrance in coming up Port William, not intending to enter, should stand towards the Narrows till they shut in the entrance point of Port William, when they will have from 6 to 7 fathoms, about a third of a mile from the shore, and can easily leave with any wind.

The previous description of, and directions for, Stanley are chiefly derived from those issued by the Hydrographic Office. The following is by Mr. Phillips, pilot, of Stanley:—

Ships from the southward should sight Cape Pembroke, which is the easternmost point of the Falkland Islands, and on which there is a wooden beacon, to be replaced by a lighthouse with fixed light. With a commanding breeze anything South of West, keep to seaward of the Wolf Rock, and pass between the Seal Rocks and Cape Pembroke, and then between the Billy Rock and Seal Rocks, where there is plenty of water, and no danger that may not be seen. Having passed the Billy Rock, haul up, and if in doubt, or if the pilot has not come off, anchor abreast of the William Islets; but in daylight there is no danger in standing in to the entrance of Stanley Harbour. The above directions are for westerly winds, which generally prevail; but when the wind is easterly, keep outside of the Seal Rocks.

Coming from the northward, with westerly winds, make Cape Carysfort, or with easterly winds, Volunteer Point; when they are passed, steer for Cape Pembroke, on which the beacon or lighthouse will be seen, until Port William opens to starboard, when run in and anchor, or wait for a pilot, according to the above directions.

In case of darkness or fog ships may anchor in the mouth of Berkeley Sound or of Port William, or stand off and on, as may be expedient, there being no danger that is not buoyed by the kelp.

The Wolf Rock bears from Cape Pembroke S. ½ W. by compass, distant nearly 3 miles. It is of a triangular shape, each side being about 3 cables' lengths.

The Seal Rocks lie about three-quarters of a mile from Cape Pembroke, and are clean on all sides. The tide runs North and South about 3 knots between Cape Pembroke and the Seal Rocks; the flood setting to the northward, and the ebb to the southward.

It is high water, full and change, at $5^h\ 30'$. Spring tides rise 4 to 7 feet.

The other parts of the Falkland Islands do not need such particular description as the preceding, as they, without exception, have no importance, except as places for stopping, or as anchorages. It may be remarked that, with the exception of the above, none of the ports on the S.E. side should be attempted except in good daylight, when the kelp, the only invariable guide, can be seen. In general, by avoiding this, you avoid danger, but not always so; where the kelp does not grow, the shallow sand may be plainly seen from aloft.

Port Harriet is 5½ miles to the S.W. of Cape Pembroke; it is swampy and of no importance, but affords excellent anchorage a quarter of a mile N.N.W. of the south-eastern point. *Port FitzRoy* is 8 miles beyond this, and there is no danger between it and *Beach Point*, half the distance beyond which there are numerous kelp patches. The best entrance from the East is to the northward of all these, keeping close to the kelp on the main shore. *Fitz Basin*, large and shallow, like the *North Basin*, enters through a remarkable gorge on the North shore. *Port Pleasant* is immediately South of it. It has two entrances formed by a narrow island, the northern of which is the best, carrying 2½ fathoms. The shores hereabout are the favourite resorts of numerous herds of cattle. It is difficult to make out the entrances of Ports Pleasant and FitzRoy from the sea.

CHOISEUL SOUND enters between *Fox Point*, the southern extremity of a long white sandy beach, with a small dark islet off it, and 9 miles from Pleasant Road, and *Lively Island* on the South. It extends 26 miles from East to West, is 5 miles broad at its entrance, gradually becoming narrower towards its head, and terminating in a long narrow inlet called Bodie Creek, which runs 4 miles westward of the head of the Sound. The head of Brenton Sound, which runs southward out of Falkland Sound, reaches within about a mile of its upper portion, forming a narrow isthmus connecting the southern and northern peninsulas. The whole of Choiseul Sound is studded with islands, which form excellent and well sheltered anchorages for small vessels: large ships can bring up in any part of the Sound in from 12 to 18 fathoms water. The bottom is all mud, covered with shells and weed. The best entrance to the Sound is to the northward of the *Middle Island* in the entrance, between it and the two black rocks, which are several feet high, and half a mile from the North shore. *Mare Harbour*, one of the finest on the coast, and easily accessible for the largest ships, is on the North side after passing the entrance. The whole country around here is covered with herds of wild cattle. On the South side of the Sound is a large inlet called *Victoria Harbour*, affording good anchorage for large ships. There is but little tide in the Sound.

LAFONIA, as the southern peninsula has been named from the purchaser, Mr. S. Lafone, is, as just stated, limited by Choiseul Sound on the East side, and Brenton Sound on the West. The original projector of this colonization has transferred his rights to the Falkland Islands Company, as stated in the introductory remarks to this section.

LIVELY SOUND, on the West side of *Lively Island*, has good anchorage for a vessel for the night to the northward of Motley Island. *Seal Cove*, which lies at the head of it, is one of the best spots for a settlement, should one be formed in this part of the Falklands, and is also the best place for ships to remain any time. *Seal Island* is the best guide to it, and there is plenty of room for a square-rigged vessel round to the North of it. *Low Bay* has its entrance between the *Trist Islands* and the North part of Bleaker or Long Island. It is indented with several bays, and though it has an inviting appearance, is not an advisable anchorage, having many foul patches. The character of East Falkland hereabout and to the southward is low, few places having a greater elevation than 150 feet.

ADVENTURE SOUND is 20 miles in length from Bleaker Island to its N.W. extremity, and its greatest breadth between 3 and 4 miles; it contains several good harbours, and various creeks and coves. Those on its S.W. side are to be preferred; the two best being Adventure Harbour and Moffat Bay. *Adventure Harbour* is reached after passing round Bleaker and North Point Islands, by a W.S.W. course, 4 miles to *Little Island*, a small dark looking mound of tussac, from whence a S.S.W. course 3½ miles more leads clear of all dangers to the harbour. This fine harbour is fit for vessels of any class, and abundance of fresh water to be had. The wild cattle were very abundant. *Moffat Bay* is 1½ miles to the southward of it. *Barrow Harbour* to the N.W. is 6 miles S.W. by W. ½ W. from *Turn Island* on the N.W. side of the entrance to the Sound. It has good anchorage and natural supplies. *Fox Harbour*, the next northward, is not so good, and *Sulivan Harbour*, near the head, has good anchorage. The time of high water is 5½^{h}, rise and fall, 5 to 6 feet.

The BAY of HARBOURS is 7 miles wide between Cow Point and Bull Point. Nearly midway is Middle Shoal, with a rock awash at low water. *Bull Road* in its S.W. part is by far the most convenient anchorage in the southern part of East Falkland. The largest ships can work into it, and are completely sheltered close to the shore on the South side of the bay, off the entrance to Bull Cove. The guide for Bull Road is to make Bull Point, which is low and tussacky, and off which there is a rocky islet surrounded by kelp; follow the edge of this kelp to the N.W., and it will lead on to the roads. *Fanny Road* is the only other advisable anchorage on the West side; no directions are necessary for it.

EAGLE PASSAGE to the S.W. of the East Falkland is not to be recommended to large vessels. There is a tide race through it of 3 knots, and there are several reefs in its S.E. part. The south-western limit of the passage is formed by Barren, George, and Speedwell or Eagle Islands.

Barren and George Islands are the southernmost, and between them there is good anchorage for any vessels, called *Owen Road;* but in coming into it from the eastward, care must be taken not to pass nearer to Barren Island than 2 miles, as reefs run off at least that distance in a north-easterly direction.

Speedwell or Eagle Island, to the northward of George Island, is the largest of the group. It is flat, and not more than 70 feet high. Fresh water and game abound on it, and drift wood on its western side. There are two good anchorages for small vessels on its N.E. side. To the N.W. of it are the *Elephant Cays*, low sandy islets surrounded by reefs and kelp, and no passage inside them.

The SEA LION ISLANDS, which lie to the S.E. of this, afford a good means of distinguishing the entrances to the various harbours on the coast, but a better still is the *Shag Rock*, a high peaked mass off the entrance to Adventure Sound. The low land around all these harbours is so much alike, that a stranger cannot distinguish them, except by the relative bearings of these more easily distinguishable parts. There is a passage to the East of the larger Sea Lion Island, between it and the kelp, surrounded by a ridge eastward of it; but a long reef, which breaks heavily, extends 2 miles to the southward of that island, for which a good look-out must be kept in running for the opening.

The tide sets to the westward during the flood along the whole South shore of East Falkland: it sets 1 to 2 knots, but near Porpoise Point it reaches 3 knots, and with westerly gales forms a strong race. The tide turns with high water by the shore, which is at 6ʰ 10′ full and change.

FALKLAND SOUND is a narrow strait which separates the two main islands, and is 45 miles long in a northerly and southerly direction, and varying in breadth from 18 to 2½ miles. In its southern end there are many flat islands clothed with tussac, and some shoals; the dangers are, however, generally visible. It ought not to be navigated at night; and as good anchorages may be obtained in almost every part of it, and good harbours abound, a safe position may always be selected before dark, and its navigation is easy. The tides in both entrances and between the islands are strong, but in the main stream they are moderate. Vessels at either extremity of the Sound, intending to proceed to sea, should the day be at all advanced, would do well to anchor for the night, and start at daylight; as in that case they would have the whole day to get clear of the entrances, and thus save some anxiety and risk, as the wind generally becomes lighter after sunset. The ports in Falkland Sound need but little directions, the shoals are all buoyed by kelp.

The eastern side of the Sound from the South end up to the N.W. islets, the western side of the peninsula of Lafonia, is a low country, with gently undulating hills, seldom exceeding 150 feet in height; the shore indented with excellent harbours. The western side on the contrary is high and bold, forming a singular ridge, varying from 300 to 500 feet high, nearly the whole length of the Sound, but reft asunder in three places, forming Port Howard, Shag Harbour, and Hill Gap. These gaps or fissures form excellent guides to the harbours on the opposite or flat side of the Sound.

Ruggles Bay, at the S.E. end, is abreast of the Calista Islands. The passage to it is between Ruggles and Wolf Islands. Excellent anchorage may be had in it in *Danson and Moffat Harbours*. Inside of the *Tyssen Islands*, North of this, are *Findlay*, *Wharton*, *King*, and *Cygnet Harbours*, all excellent and secure, especially the three first: *Newhaven* is a little port well suited to small vessels on the South side of *Grantham Sound*.

Brenton Loch, an inlet with a narrow entrance to the eastward of Newhaven, extends 9 miles from its mouth close up to the head of Choiseul Sound, which thus peninsulates the southern portion of East Falkland. The navigation of Brenton Loch is impeded by several rocks and shoals, but it is admirably sheltered, and is apparently a great resort for seals. *Port Sussex*, to the North of this, is a snug and good harbour; the best anchorage is on the South side. It is an excellent port for careening and refitting.

PORT SAN CARLOS, near the North end of the Sound, is one of the finest harbours in the Falklands, being capacious, secure, and clear of all dangers. Wild cattle and geese abound in the neighbourhood; plenty of fuel and water may be had. Off the entrance of this is the northern and narrowest entrance to Falkland Sound. Between Race Point and Cape Dolphin lie *Foul* and *Middle Bays*, which present no inducement to enter. There is a shoal about three-quarters of a mile S.W. of Cape Dolphin.

The EDDYSTONE ROCK, which is off Cape Dolphin, is an excellent mark for the northern entrance to the Sound. It is well seen from a vessel's deck at 8 miles off, and when at that distance exactly resembles a ship under all sail.

PORT SALVADOR, on the North side of East Falkland, is difficult to enter on account of its long and narrow channel and the rapidity of the tides, but when inside good and secure anchorage abounds all over the port, and all dangers, except two shoals of 2 fathoms, are visible.

In making for the North entrance to Falkland Sound, steer for *Fanning Head*, the high double peak (600 feet) on the eastern side of the entrance; or, if it be obscured, make a S. by E. course from the Eddystone Rock until within a couple of miles of Race Point, when the eastern shore must be kept on board to avoid the *Tide Rock*, *Awash Rock*, and *Sunk Rock;* the two latter are lurking dangers, but as the Tide Rock shows itself and is steep-to, it forms a good guide to avoid the others, by never bringing it to bear to the eastward of South.

White Rock Bay, at the N.W. entrance of the Sound, is an excellent port, and can be *left or entered with any wind. Manybranch Harbour* will only admit fore-and-aft craft, in consequence of its narrow and crooked entrance. *Port Howard* has also a narrow entrance, but the harbour widens out immediately inside the heads, and is very secure. A vessel would shoot well in by keeping close round the South head with the wind to the southward of West. *Shag Harbour* is fit only for small vessels. *Fox Bay* is wild, and exposed with South winds to a heavy sea, but has a good retreat in its northern arm.

PORT EDGAR is easily known after making Cape Meredith, or the Arch Islands to the southward, and it is the nearest opening westward of Fox Bay. The bluff and very narrow entrance renders it very difficult to enter with the wind northerly, and when it is between S. and W. it is very baffling and squally. Therefore good way should be kept on the vessel and the western shore well closed, even to the edge of the kelp. By these means a vessel may shoot past the heads, and inside, the harbour, for security, is second to none. There is but little tide in its entrance.

Port Albemarle may be entered from either side of the Arch Islands, but the water is inconveniently deep in the Roads; there is good anchorage in Lucas Bay, but the anchorage among the Arch Islands is preferred by the whalers to that of Port Albemarle, from being nearer to the open sea, and with less depth of water. The *Albemarle Rock*, which is a good guide to the port, is bold, upright, and about 150 feet high, saddle shaped, and whitened by birds. The *Arch Islands* are remarkably rugged, with upright light coloured cliffs, and have a natural archway, through which a boat can pass at the West end of the largest island.

Port Edgar has been described by *Captain W. F. Owen*, commander of H.M.S. *Eden*, in 1830. The Eden was forced into this place by stress of weather, when on her way from Cape Horn to Rio Janeiro, in the month of March. Captain Owen describes it as a beautiful port, having many advantages for a settlement; with abundance of water, peat, good soil, and stock. The depth of water, in the middle of the entrance, is 18 fathoms; and the general depth in the port is from 10 to 17 fathoms, excepting where the appearance of weed indicates less. The entrance of the harbour, between the two points, Leven and Eden, is 210 fathoms across, but 150 only clear of the weed off each point, and there is a depth of 4 fathoms alongside these points. No stream of tide was observed during the last three days of the moon's first quarter, and a rise and fall of only 3 feet.

Captain Owen further observes, that a convenient port is much wanted on the southern coast of the West Falkland Island; for ships are frequently caught in furious southern gales in rounding Cape Horn, and sometimes suffer much injury. Such a port as that of Edgar would not only afford such shelter, but is convenient to start from with the first of a N. or N.W. wind, which would carry them clear round. It would answer much better as a private speculation in the hands of an independent company, and being a free port, than as a public concern. There is no timber to be seen; but Captain Owen is of opinion that English woods would grow in the sheltered valleys and on the northern and eastern slopes of the hills.

The Eden was overtaken by a furious gale between Beauchêne Island and the S.W. extremity of the Easter Falkland, with thick snow and hail storms; when, not being able to weather Beauchêne Island, nor to see around, Captain Owen was obliged to seek a port. Two days afterwards the *Durance*, a French frigate store ship, was placed in similar circumstances, and just weathered Beauchêne.

PORT STEPHENS is the first port to the westward of Cape Meredith, the southernmost point of the islands. The land is very remarkable; Bird Island and the Castle Rock lie to the westward of the port, and a notable hill, called the Three Crowns, with three distinct masses of bare rock, lies to the south-eastward. Stephens Bluff is a remarkably cliffy head, appearing like an island, and its outer part is very similar to the Castle Rock. The entrance is 400 yards wide, and all its dangers buoyed by kelp. Port Stephens is not easily quitted except with a fair wind, particularly after a southerly breeze. There is good anchorage between Stephens Bluff and Pea Point.

Rodney Cove is the only place of shelter between this and Cape Orford, and is a good and secure anchorage, but can only be entered with a leading wind. *Cape Orford*, which forms the South entrance point to *Smylie Channel*, is cliffy, about 100 feet high, and with a small island called the *Sea Dog*, in the offing. There is a heavy tide runs in Smylie Channel with westerly winds. When inside this entrance, two openings will be seen on either side of *Dyke Island;* the northern one leading into Queen Charlotte Bay, the other into *South Harbour*, in every part of which there is good anchorage for the largest ships.

There are numerous anchorages in the channels between *Beaver* and *Weddell Islands*. But as all of these channels are too intricate to be generally used, little need be said of them. The best anchorage is in Beaver Harbour, on the East side of Beaver Island. This channel and the kelp will be the best guide to it.

NEW ISLAND, &c.—From the South entrance of West Point Harbour New Island lies S. 25° W. 22 miles distant, and upon the eastern side of this island is *Coffin*, or *Ship Harbour*. New Island is mountainous, and its western side presents a range of frightful precipices, one of which is 550 feet above the sea, which in westerly storms beats against its base with extraordinary violence. The eastern side, on the contrary, falls sloping into points forming bays, and of these Coffin Harbour is the third from the South.

On coming from the westward, in lat. 51° 42′, New Island may be readily distinguished by its being the most northerly large island of that cluster, and by two islets lying off its North end, called Saddle Isle and North Head; between these and the North end of New Island is a clear passage, but in which during strong winds the tide ripples violently.

Coffin Harbour, being the preferable anchorage, is the most to be recommended. In proceeding to it with a strong westerly wind, on rounding the North end of New Island the sail on the ship should be particularly attended to, as the gusts of wind off the high land blow with great violence. With the wind at S.W. the South passage may be chosen; but it is to be noticed that a cluster, called the *Seal Rocks*, lie off the South end of the island, between which and the rocks is the best passage; and by keeping without the edge, off the kelp, which extends to a short distance from the end of the island, there is no danger.

The small round isles on the eastern side of New Island have good channels within, and between them Ship Harbour may be easily recognised by its having a small isle, *Ship Island*, in it. Behind this is the best anchorage, in 7 fathoms, in a bottom of stiff clay, with the South point of Ship Island bearing S.E., covering the S.E. point of the bay. The anchorage is perfectly land-locked.

Good water may be obtained at a sandy beach abreast of the anchorage, but it should be taken at 8 or 10 yards higher than the present pool on the bank, otherwise it may be brackish and undrinkable. Excellent peat is abundant, especially on Ship Isle. In order to get it dry, it is necessary to pull it from the sides of the pit, not very deep; and as there are several peat holes, by working them alternately, the material may be procured in a state fit for use.

Grey Channel, to the southward of New Island, is clear of all danger on either side of the Seal Rocks, but the tides are strong, especially with westerly winds. If it should happen that a vessel cannot fetch New Island harbour, she should not hesitate to bear up and run along the group of islands off the N.W. side of Weddell Island; she will soon make out *Bald Island*, on the N.W. side of Weddell Island, at the entrance of Chatham Harbour. It is small, round-topped, with a high cliff on its western side, and is close off *Beacon Point*, on which is a hill 300 feet high, with a small stone beacon on it. Passing outside of Bald Island, anchorage may be reached in Bald Road, or in Chatham Harbour, in which Elephant Cove is the best place.

Port Richards, at the S.E. part of Queen Charlotte Bay, offers no very good anchorage, except in a cove on the North shore. Its head nearly joins the inner basin of Port Edgar. Vessels requiring anchorage here will find better in *Antony Creek*, or Carew harbour, to the West of Port Richards. *Philomel Road* is on the northern side of Queen Charlotte Bay. On its North side is Shallow Harbour, which may be known in coming from the westward by the steep bluff 2 miles West of it. A bright green tussac island lies abreast of the harbour, which may be passed close on its South side. The chart and kelp will be the best guides. At the N.E. end of the road a narrow channel, 6 miles long, leads to the splendid land-locked harbour of *Port Philomel*; but the tide is so strong in this channel that it is hardly safe but for small quick-working vessels to venture up it.

KING GEORGE'S BAY and Queen Charlotte Bay are separated by a long narrow strip of land, off the extreme of which lie the four *Passage Islands*. The two eastern passages are very good, and clear of all danger. All the shores of the Passage Islands are steep, and there is no outlying danger but what shows plainly; but there is no good anchorage near them. *King George's Bay* narrows into *Christmas Harbour*, which one day is likely to be of much importance, as it leads to the heart of West Falkland: at its head there are creeks and large fresh water streams, the largest of which is the *Chartres River*, running through some of the best, and best watered land of the whole group. The entrance to it is well marked by *Town Point*, which, after a vessel has passed *Hummock Island*, appears as if covered by scattered houses, an appearance caused by numerous patches of white sand. *Port North*, farther West than this, is a deep bight with a moderate depth of water, but rather exposed to West and S.W. gales.

WEST POINT HARBOUR.—The next principal anchorage to Port Egmont is *West Point Harbour*, at the western extremity of the southern land of Byron's Sound. There are two passages into it, one on the North and the other on the South. The *Jason Islands*, lying to the N.W., are much in the way of the former; and these islands must be cautiously avoided in the night and in unsettled weather, as the tide runs so strong and irregular amongst them as to render a ship almost unmanageable.

The southern passage to West Point Harbour is easily made, by being careful, when coming from the westward, to haul close round West Point Island, so as to enter with it on the larboard side, for by neglecting this precaution, with the wind from the westward, you may fall to leeward of the passage, and find it difficult to work out of the lee-bays into which a heavy swell frequently rolls. The latitude of the anchorage here, according to Captain Weddell, is 51° 24′ 15″, and the longitude is about 60° 51′.

The best anchorage in West Point Harbour is abreast of a small cove on the South side, in 5 fathoms, over a bottom of sand and mud. The stream of tide here is scarcely perceptible, although it rises about 9 feet by the shore, and flows, on full and change days, at 7^h 30′. Water may be obtained at the head of the cove; and at the head of the harbour there is also a run of water, in which mullets may be caught by constructing a fish weir. Water is abundant during the spring and autumn, not only here, but at Beaver Island, to the S.W., and at Little Port Egmont, in the West side of the passage to the greater port of the same name.

At the West end of West Point Island is a rookery of the small albatross, which in October affords a good supply of eggs. Some brushwood grows around the cove, but it is too small to be useful.

In proceeding through the Gut of West Point from the southward, with ebb tide, which runs to the N.E. with great rapidity, the great harbour, when opened, must be hastily entered, in order to avoid being swept to the northward by the stream.

PORT EGMONT.—The entrance of Port Egmont,* on the North side of the Great Island, may be descried at some distance from the sea, and may be entered by steering S.E. by S., which will lead in safely. On advancing, you will pass two rocky islets, which lie about 9 miles N.N.W. from the entrance; by passing within half a mile of the western side of these, the course in will be about S.S.E. ½ E.

Captain Weddell has observed, that the site of the English settlement at this port was certainly ill chosen. The ruins of part of the town still remain, standing on the South side of a mountain not less than 600 feet high. The settlers, it appeared, had extended their gardens to the westward of this mountain, so that during the winter the solar rays must have been almost lost to them during the greater part of the day.

The harbour is spacious, even to a fault; for its great size, during strong winds, renders communication with the shore inconvenient. The best anchorage is immediately off the creek at the foot of the ruins, bearing N.N.W., in 9 fathoms of water, about three-quarters of a mile from shore. A reef extends from the East point of the creek, but may be known by the kelp which grows upon it. The ground is, however, so tough that the anchor will not be raised without great labour.

The best watering place in this port is at the head of the creek, and the most expeditious method of obtaining water is to fill the casks at low water mark, and raft them off to the vessel. Fuel may be obtained by digging peat, about 100 yards above the top of the creek, but it requires drying, and is not so good as that found at some other places.

The tide, on the full and change, flows at 7^h 10′, and rises about 9 feet. A few years ago refreshments were plentiful in this port, as there were many hogs, which had been left by the settlers, running wild on *Saunders' Island;* but they are now nearly extinct. Upland geese, which a few years ago were very numerous, are now scarcely to be found;

---

* Description by Captain Weddell.

so that the only supplies which may be expected are ducks and geese, which feed on fishy substances on the shores, and thus very soon become nauseous to the taste.

Tamar Harbour, to the eastward of Port Egmont, is not a good harbour, as the entrance is narrow, rapid tides prevail through it, and there are rocks in the passage.

Pebble Sound, lying between Port Egmont and Tamar Harbour, is studded with islands, which would render its navigation difficult to strangers.

Captain Grant, commander of the *Lady Nelson*, in the relation of his voyage to New South Wales, has given some useful remarks on the Western Islands. He states that on the 21st of January, 1802, having before intended to touch at these islands, they came safely to an anchor in Hope Bay, or Little West Point Harbour, in the N.W.; and then proceeds as follows:—

"Our intention had been first to touch at a cluster of islands to the westward, called NEW ISLANDS by the Americans, who are the most constant visitors of Falkland Islands. On New Islands are found plenty of goats and hogs. They lie about 30 miles S.S.W. by compass from West Bay, as a N.N.E. course carried us from them clear to the entrance of West Point. They are distinguished by a particular saddle island and a bluff, standing separately from each other. They are a little to the northward of Beaver Island, and may be easily found by the two remarkable islands just mentioned.

"As it is of the greatest consequence to mariners, when in want of water or refreshments, to obtain every possible information in order to secure a port amongst this foul weather group of islands, which purpose may be defeated by the smallest oversight, I think that a few remarks made in the run may not be unacceptable.

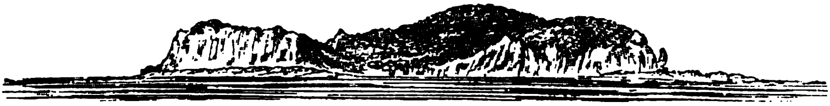
"*Having made New Islands*, the westerly wind which generally prevails, blowing very strong and in squalls, would not permit us to anchor; we were, therefore, under the necessity either of making the harbour of *West Point*, or running in the night through a passage among the Jasons, well known to be full of rocks and shoals, many of them not laid down in any chart. I have before observed, that 30 miles N.N.E. by compass brought us to the entrance of West Point Harbour. In this run there are, on the right hand, a few small flat islands, called *Passage Islands:* these ought to be kept on board near enough to see the surf breaking on them; and soon after a remarkable island, with a steep side, will present itself, having the appearance of a split in the middle, which has given it the name of *Split Island*.

"The Split must be brought to bear S. by W. in running in, and N. by E. in coming out: observing this a vessel will find itself in the fairway, and right ahead coming in, or right astern going out, a sight will be had of *West Point entrance*, making at first like three hummocks, to the right of which is the mouth of the harbour. The small harbour on the left is preferable to the larger one on the right, though anchorage may be found in both, but fresh water may more readily be had in the little harbour. Both these together form nearly an oval, divided by the passage which runs directly through, where the tides of flood and ebb alternately enter. A vessel must therefore haul close round the rocks on the South side, to get into the little harbour for the ebb tide, with which she must go in, unless it blows very strong, so as to enable her to stem the flood; both tides running here with great rapidity, and when it blows hard raising a confused sea. There is a sandy beach at the top of the harbour, off which a vessel may choose her depth of water to anchor in. In going out of the harbour the northern passage is most eligible; and a westerly wind, with a course N. by E. by compass, will carry a vessel out, provided she get under way at the first of the ebb.

"Five small perpendicular rocks called the *Needle Kays* appear, when out, standing together, bearing N.E. by E., or thereabout, from the harbour's mouth. It is best to leave them on the right; but should there be little wind and the tide strong, as was the case when we passed them, a vessel may go close to the right of them. The tide must be attended to, as it runs strongly betwixt them. The water close to them is very deep, as we were carried by the tide near enough to throw anything upon them. The bottom is very foul, so that if an anchor is let go, it is a chance if it be ever recovered; and should the wind continue light, the tide of flood making, a vessel may anchor at *Sedge Island*, if she can get as far down, where 10 fathoms of water will be found, with a sandy bottom, within 2 or 3 miles of the shore. From Sedge Island a N. by E. course will carry a vessel clear out to sea.

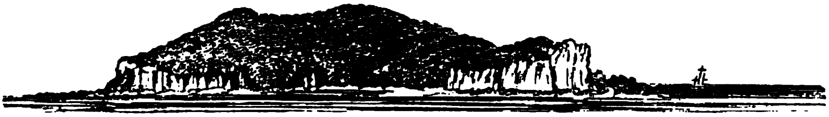
"*It is proper to observe here*, that if a vessel is obliged to leave the Needle Kays on her left hand, the nearer she keeps to them the better; and even to haul over on the larboard side after she is past, as she will have the more room to weather a ledge of rocks lying at a considerable distance out from Saunders' Point, as is shown in Lieutenant Edgar's chart. This passage is much preferable to running through the Jasons."

BEAUCHENE ISLAND, lying about 7 leagues to the southward of the Eastern Falkland, is uninhabited. We give the appearances annexed from sketches taken by Mr. *D. Lye*, Master R.N., which have been kindly forwarded by our respected friend, Lieutenant John Evans, of Bedminster.

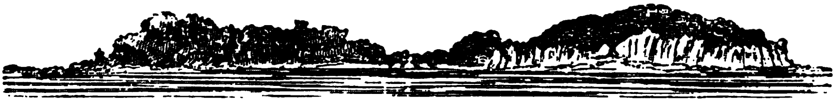


Beauchêne Island, W.N.W. ½ W. 4 miles.

The name of the island is from that of the French navigator *Beauchesne Gouin*, who discovered it in 1699, and which was soon after given in the charts.



Beauchêne Island, bearing North, 4 or 5 miles.



Beauchêne Island, N.W. 4 miles.

Captain Morrell was here in October, 1822, and describes the island as barren, and having deep water around it. On its shore fur seal have been found, and in the moulting season many kinds of oceanic birds.

Captain FitzRoy approached Beauchêne Island on the 9th of March, 1834; he says, "Many persons have fancied that there are two islands near together in that place, having been deceived by two hummocks on the only island, which from a distance show just above the horizon like two islets." It is in lat 52° 51′ S., lon. 59° 12′ 40″ W.

Captain *George Mintey*, when on his passage from Liverpool to Lima, August 15th, 1841, the ship under his command struck on a *sunken rock* to the southward of Beauchêne, the compass and binnacle being washed away from the deck. As near as could be judged from the direction of the ship's head by a compass in the cabin, it bore S.S.W., distant about 3½ miles.*

We now conclude this article on the Falkland Islands with some observations from the *United Service Journal* for November, 1834:—

"Great advantages, in a commercial point of view, would arise from these islands having a regular settlement, with an intelligent officer as its governor. As our commercial relations with the rising states of Chilé and Peru increase, the beneficial effects of having a colony would become the more apparent, for besides Berkeley Sound being more in the way of homeward bound ships than any port in Brasil, the certainty of procuring water and provisions at a much lower rate here than in the other country would be a greater inducement for them to touch at a British settlement. They would likewise escape the lighthouse and harbour dues, which are rather high in Brasil. In short, to use an old expression, this port would soon, as it were, become the halfway house for homeward bound vessels from New South Wales and Van Diemen's Land, as well as from Chilé and Peru, to say nothing of the great advantages which the whalers, &c., would derive from it. In a naval point of view the advantages would also be very great, as commanding the entrance to the Pacific Ocean."

---

* Naut. Mag., 1842, p. 297.

26.—L'AIGLE SHOAL.

A shoal bearing this name is said to have been seen on the 1st of October, 1817, by Mr. R. Poole of the ship *L'Aigle*, who places it in lat. 51° 51', lon. 64° 30'. It was described as extending North and South, 200 or 300 yards. The ship was then steering S.E., and about three quarters of a mile from it off and on. Steering South, about 1½ miles, had soundings in 87 fathoms.

In the "*Liverpool Mercury*," 12th of Nov., 1824, was a notice from an officer of the frigate *United States*, stating that a rock had been discovered between the Falkland Islands and Patagonia, in lat. 51° 51', lon. 64° 42. This, consequently, *if existing*, must be the same.

But Mr. John Jaffray, who in 1823 so attentively sought for the *Isle Saxemburg* and the *Isle Grande*,* has several times sought for *L'Aigle Shoal*, and is convinced that no such shoal exists. He has obligingly informed us that, on the 23rd of April, 1819, he crossed the latitude 51° 21', in longitude 64° 32', when in the Italian ship *Tiburtina*, bound from Buenos Ayres to Valparaiso. At 2ʰ p.m., fine clear weather, and a good look-out, &c., &c. He then passed through the Strait of Le Maire, and made his passage in 29 days. Returning in the same ship to the River Plata, in the July following, he again passed through the Strait of Le Maire, and crossed the given latitude of the shoal in the longitude of 64° 47', during fresh westerly winds and clear weather, a good look-out being kept.

In the ship *John and George*, November, 1819, from Buenos Ayres to Valparaiso, Captain Jaffray again crossed the latitude of 51° 51', in 64° 27' W., with fresh winds and clear weather. No shoal was seen. He ran over the same latitude again, in the Portuguese ship *Ceres*, from Monte Video to Valparaiso, 27th of May, 1820; but no shoal could be seen with a good look-out. Cape St. John was seen and passed on the next day.

On the 13th of June, 1821, from Buenos Ayres, in the British ship *Dragon*, Captain Jaffray once more ran over the situation of the supposed shoal. At 8ʰ p.m. fresh N.W. winds and clear weather; next day passed through the Strait of Le Maire. In August, 1823, in the British ship *Will*, from Peru to Gibraltar, passed Cape St. John at the distance of a league, and steered for the shoal. Next day, at 3ʰ p.m., moderate S.W. winds and clear weather: sounded in 87 fathoms, bottom of sand.

Finally, when bound from the Rio de la Plata to Valparaiso, in March, 1824, Captain Jaffray again passed over the given situation of the shoal; and then resolved, however often he might pass, never to look for it again!

Captain Jaffray says, that between the Falkland Islands and the main land, as well as in many parts of the Chinese Sea, he has seen tide rips or *races* appear like very high breakers, and perhaps no soundings at the place. The imaginary shoal of L'Aigle seems therefore to have been a rip of this description only.

The shoal was sought for by Captain Jas. Weddell, on the 2nd of January, 1823, but not found.

H.M.S. *Tartar*, at noon, on the 2nd of January, 1823, was in lat. 51° 55', lon. 65° 7' 15", and hauled up in order to obtain a sight of *the shoal;* but with a run of 15 miles, and a view of 10 from the mast-head, nothing of it was seen.

Captain Lincoln, of the brig *Inca*, cruised in search of it, so that if it had existed it could scarcely have been missed.

Lastly, on the 10th of December, 1837, Admiral d'Urville passed precisely over the position assigned by some charts to the Aigle Shoal, without seeing anything of it. The conclusion therefore is that the *shoal does not exist.*

Between the Falkland Islands and the coast of Patagonia, in 1823, Captain Kotzebue was accompanied by great numbers of storm birds, betokening the vicinity of land, on his approach thereto.

27.—BURDWOOD BANK.

This extensive bank of deep water sounding is above 250 miles in length from West to East, and extends on the parallel of Staten Island nearly to longitude 55° W. It has been explored by Sir James Ross in his Antarctic voyage, and its limits and character more fully ascertained by Captain Sulivan and others, as exhibited on the chart.

---

* See the preceding pages 131 to 135.

The original account from which this bank derives its name is of a different nature, as it is an *islet* which was announced, but, it need scarcely be stated, that the existence of this has been disproved by the examinations above alluded to. In our former editions the following notice appeared of this *doubtful* Kains Inlet.

The *Kains* transport, Lieut. T. Burdwood, agent, in her passage from Rio Janeiro to Valparaiso, in November, 1828, is said to have passed a rocky islet in lat. 54° 9' S., lon. 59° 36' W. The existence of such a rock had been reported by the Spaniards in 1813, but was considered as doubtful. It is stated that Lieut. Burdwood had the satisfaction of having his observations corroborated by a mercantile commander, according to whom it would lie about 120 miles South from the Falkland Isles.

Captain Sir James Ross struck about the eastern extremity of the bank in lat. 54° 41' S., lon. 55° 12' W., in 280 fathoms, coarse black sand and small volcanic stones. He subsequently made a closer examination, as is stated in the following extract:—

On Nov. 11, 1842, in lat 54° 18' S., lon. 60° W., he obtained soundings in 50 fathoms, but could not see the rock nor any appearance of broken water, although the weather was clear, and the sea sufficiently rough for breakers to be visible at a considerable distance. The remainder of the day was spent in sounding and surveying the Burdwood Bank, which was traced between 12 and 13 miles to the eastward. The least depth of water found was 24 fathoms, the shoal forming a narrow ridge of volcanic rock, lying nearly East and West, the soundings rapidly increasing in depth on either side of the ridge, and consisting of coarse sand, small stones and shells. The colour of the sea was observed to be of a deep brown over the bank, some dark patches of seaweed (macrocystus) were seen as it was approached, and the line of the bank was marked by a rough ripple on the surface. Ten miles to the northward the depth was 80 fathoms, on fine black sand, and 30 miles further to the North there was no bottom with 300 fathoms. Sir James Ross, Vol. I., pp. 281, 315.

28.—POTTINGER'S BANK.

On the 5th of Jan., 1822, Captain Pottinger, of the brig *Tartar*, of London, on his passage from South Georgia to South Shetland, passed over a bank in lat. 54° 36' S., lon. 57° 49' W.; soundings, 65 fathoms, coral rocks, with sea eggs and shells. He supposed that he had passed over a considerable and much shoaler part of it before daylight, judging by the agitated state of the sea.

Captain Fildes, to whom we owe this communication, says, I saw some of the soundings, that came up with the pitch-pot when trying the current, which was the way the bank was discovered; for, on letting down the pot, to their surprise they struck soundings.

29.—AURORA ISLES?

AURORA ISLES?—Several small isles, distinguished by this name, have found a place in the charts from the reports of the Spanish navigators, and Captain Weddell has given some copious extracts from those reports. They were said to have been first seen in 1762 by the ship *Aurora*, after which they were named; and again, in 1790, by the ship *Princessa*. The corvette *Atrevida*, in 1794, went purposely to *situate* them; and they were then described as three, very nearly in the same meridian; the central one rather low, and the other two so high as to be seen 9 leagues off. *Positions:*—northern isle, 52° 37' 24" S., 47° 43½' W.; middle isle, 53° 2' 40" S., 47° 55½' W.; southern isle, 53° 15' 22" S., 47° 57½' W. The description annexed was very circumstantial, and there seemed to be no reason for doubting their existence, however questionable the positions might have been. Captain Weddell states that, from the credibility of the documents, he was induced, in 1820, to make a strict search for the islands, the particulars of which he has given at large: he traversed in every direction, but nothing like land, even in fine clear weather, was to be seen; and at last he says, "the only chance now left us for finding these Auroras, I conceived, was by making various courses between the latitudes of 53° 15' and 52° 37'; and this we did till we reached the longitude (by chronometers) of 46° 29'. Having all this time seen nothing resembling land, excepting fog banks, which had often given us severe disappointment, we returned westward; and on the 5th of February, at noon, our latitude was 52° 44', and longitude 48° 33'. We had thus again passed over the sight of these islands to no purpose.

"On the 6th our latitude, by observation, was 53° 24', and longitude, by chronometers, 49° 49'. We continued to stand to the westward under easy sail, with the wind northerly; and on the 7th our latitude, by observation, was 53° 33', and longitude 51° 5'. Having thus diligently searched through the supposed situation of the Auroras, I concluded that the discoverers must have been misled by appearances; I therefore considered any further cruise to be an improvident waste of time; and, to the gratification of my officers and crew, directed our course to the Falkland Islands."

The islands have since been sought for by Captain Morrell, Captain Biscoe, Captain Johnson, of New York, and others, but with no better success: and of their *non*-existence there seems no longer to be any doubt.

30.—THE SHAG ROCKS.

The Shag Rocks are represented as existing in lat. 53° 48', lon. 43° 25', and are said to be even with the water: but Captain Weddell says, "this I believe not to be the case, as I have been credibly informed that they appear in three pinnacles, or in the shape of sugar-loaves, 60 or 70 feet high, with a reef running around them. These reefs, I presume, have given rise to the supposed existence of the Aurora Islands."

Or it may be that the Auroras were merely icebergs, incorporated with earth, similar to one seen by Captain Weddell far to the southward.

31.—SOUTH GEORGIA.

South Georgia was discovered by Antony La Roche, in 1675, and explored by Captain Cook in 1775, who gives the following description:—

"At 9^h a.m. (Jan. 14) we saw an island of ice, as we then thought, but at noon were doubtful whether it was ice or land. At this time it bore E. ¾ S., distant 13 leagues. Our lat. was 53° 56½', lon. 39° 24' W. Several penguins, small divers, a snow petrel, and a vast number of blue petrels about the ship. We had but little wind all the morning, and at 2^h p.m. it fell calm. It was now no longer doubted that it was land, and not ice, which we had in sight. It was, however, in a manner wholly covered with snow. We were further confirmed in our judgment of its being land by finding soundings at 175 fathoms, a muddy bottom.

"At 4^h in the morning of the 16th we wore and stood to the East, with the wind at S.S.E., a moderate breeze, and fair; at 8^h saw the land, extending from E. by N. to N.E. by N. At noon observed in lat. 54° 25½', lon. 38° 18'. In this situation we had 110 fathoms of water, and the land extending N. ½ W. to East, 8 leagues distant. The northern extremity was the same that we first discovered, and it proved to be an island, which obtained the name of Willis's Island, after the person who first saw it.

"At this time we had a great swell from the South, an indication that no land was near us in that direction; nevertheless, the vast quantity of snow on that in sight induced us to think it was extensive, and I chose to begin with exploring the northern coast. With this view we bore up for Willis's Island, all sails set, having a fine gale at S.S.W. As we advanced to the North, we perceived another isle, lying East of Willis's, and between it and the main. Seeing there was a clear passage between the two isles, we steered for it; and at 5^h, being in the middle of it, we found it about 2 miles broad.

"*Willis's Isle* is a high rock, of no great extent, near to which are some rocky islets. It is situated in lat. 54° S., lon. 38° 23' W. The other isle, which obtained the name of Bird Isle, on account of the vast number that were upon it, is not so high, but of greater extent, and is close to the N.E. point of the main land, which I called Cape North.

"The S.E. coast of this land, as far as we saw, lies in the direction of S. 50° E. and N. 50° W. It seemed to form several bays or inlets; and we observed large masses of snow or ice, in the bottoms of them, especially in one which lies two miles to the S.S.E. of Bird Isle.

"After getting through the passage, we found the North coast trended E. by N. for about 9 miles, and then East and East-southerly to Cape Buller, which is 11 miles more.

We ranged the coast at 1 league distance, till near 10^h, when we brought-to for the night, and on sounding found 50 fathoms, a muddy bottom."

Captain Cook proceeded to examine the eastern coast, and took formal possession of the land. The tide seemed to rise about 4 or 5 feet. High water at about 11^h full and change. The head of Possession Bay, as well as two places on each side, was terminated by perpendicular ice cliffs of considerable height. Pieces were continually breaking off, with a loud explosion, and floating out to sea.

"The inner parts of the country were not less savage and horrible. The only vegetation we met with was a coarse strong bladed grass growing in tufts, wild burnet, and a plant like moss, which sprang from the rocks. Seals were numerous. Several flocks of large penguins were seen. The oceanic birds were albatrosses, common gulls, terns, shags, divers, &c. The land birds were a few small larks. No quadruped was seen. Variation, 11½° E.

"Cooper's Isle, at the S.E. end of Georgia, is a rock of considerable height, about 5 miles in circuit, and 1 mile from the main. At this isle the main coast takes a S.W. direction, for the space of 4 or 5 leagues, to the point named Cape Disappointment. Off that are three small isles, the southernmost of which is green, low, and flat, and lies 1 league from the cape.

"The island seems to abound with bays and harbours, the N.E. coast especially, but the vast quantity of ice must render them inaccessible in the greatest part of the year; or at least it must be dangerous lying in them, on account of the breaking up of the ice cliffs. It is remarkable that we did not see a river, or stream of fresh water, on the whole coast. I think it highly probable that there are no perennial springs in the country; and that the interior parts, as being much elevated, never enjoy heat enough to melt the snow in such quantities as to produce a river or stream of water."

CLERKE'S ROCKS are three or four rocky islets, which were subsequently seen at the distance of 2 or 3 miles. Vast numbers of birds, especially shags, were about them. *For the climate of South Georgia, &c.*, see page 13.

SOUTH GEORGIA was visited by Captain Weddell, on his return from the southward, in March, 1823. On the 12th, at 3^h p.m., the *Jane and Beaufoy* anchored in *Adventure Bay*, on the S.W. side of the island, in 7 fathoms, bottom of strong clay.

The arrival, though not to a country the most indulgent, was considered to be a very happy event. "Our sailors had suffered much from cold fogs and wet during the two months they had been navigating the South; and, as we had been nearly five months under sail, the appearance of scurvy (that disease so fatally attendant on long voyages) was to be dreaded. Our vessels, too, were so much weather-beaten, that they greatly needed refitting; so that, taking into account our many pressing wants, this island, though inhospitable, was capable of affording us great relief.

"Our crews here fed plenteously on greens, which, although bitter, are very salutary, being an excellent anti-scorbutic: with regard to meat, we were supplied with young albatrosses, that is to say, about a year old; the flesh of these is sweet, but not sufficiently firm to be compared with that of any domestic fowl.

"Our harbour duties, and a search upon the island for animals for our cargo, were immediately commenced, and carried on with zeal, although we experienced frequent interruptions from heavy gales, which were now prevalent; it being near the time of the autumnal equinox of this hemisphere.

"I took opportunities of making various observations on shore, and found the head of the bay to lie in lat. 54° 2′ 48″, and in lon., by the mean of two of the best of my chronometers, 38° 8′ 4″. The variation of the compass, at the same place, by azimuth, was 11° 15′ East.

"The head of this bay being surrounded with mountains, I ascended the top of one of them for the purpose of taking the altitude of the sun when at some distance from the meridian; but, after planting my artificial horizon, I was surprised to find that, although there was not a breath of wind, and everything around perfectly still, yet the mercury had so tremulous a motion that I could not get an observation. The ground was evidently agitated internally; though it was only by means of the quicksilver that I could detect it.

"On the 17th of April, our harbour business being completed, both vessels put to sea, and, with the wind at East, we directed our course toward the Falkland Islands.

"I need not remind the reader of the great advantages navigation and geography in general have acquired from the discoveries and investigations of that able navigator Captain Cook; but the public may not be aware of the great extent to which his researches in the South, in particular, have been beneficial to Great Britain.

"His official report regarding the island South Georgia, in which he gave an account of the great number of sea elephants (called by him sea lions), and fur seals, found on the shores, induced several enterprising merchants to fit out vessels to take them; the elephants for their oil, and the seals for their skins. These animals are now almost extinct; but I have been credibly informed that, since the year in which they were known to be so abundant, not less than 20,000 tuns of the sea elephant oil has been procured for the London market. A quantity of fur seal skins were usually brought along with a cargo of oil; but, formerly, the furriers in England had not the method of dressing them, on which account they were of so little value as to be almost neglected.

"At the same time, however, the Americans were carrying from South Georgia cargoes of these skins to China, where they frequently obtained a price of from 5 to 6 dollars a-piece. It is generally known that the English did not enjoy the same privilege; by which mean the Americans took entirely out of our hands this valuable article of trade.

"The number of skins brought off from South Georgia, by ourselves and foreigners, cannot be estimated at fewer than 1,200,000. I may here also remark, that the Island of Desolation [Kerguelen's Land], which Captain Cook likewise visited and made known, has been a source of scarcely less profit than South Georgia. Hence, it may be presumed that, during the time these two islands have been resorted to, for the purpose of trade, more than 2,000 tons of shipping, and from 200 to 300 seamen, have been employed annually in this traffic."

Captain Weddell now gives his description of South Georgia as follows:—

"The island is about 96 miles long, and its mean breadth about 10 miles. It is so indented with bays, that, in several places, where they are on opposite sides, they are so deep as to make the distance from the one side to the other very small. Near the West end, in particular, there is a neck of this kind, about half a mile broad, over which boats are frequently transported.

"The tops of the mountains are lofty, and perpetually covered with snow; but in the valleys, during the summer season, vegetation is rather abundant. Almost the only natural production of the soil is a strong bladed grass, as above mentioned, the length of which is, in general, about 2 feet; it grows in tufts, on mounds 3 or 4 feet from the ground.

"No land quadrupeds are found here; birds and amphibious animals are the only inhabitants; of the bird tribe, the king penguin is the most worthy of notice." *

Captain Morrell, in the *Wasp* schooner, touched here in November, 1822, and he describes the spot in which he anchored as *Wasp's Harbour*, in lat. 54° 58′, lon. 38° 25′. No seals were then to be found.

32.—THE SANDWICH LANDS.

Mr. Pinkerton says, "These lands may be styled the SOUTHERN THRONE OF WINTER, being a mass of black rocks, covered with ice and snow." They were discovered by Captain Cook in 1775, on proceeding to the south-eastward from South Georgia. From the lat. of 59° 30′ S., lon. 29° 24′ W., the ship stood to the N.E., with a fresh breeze at N.N.W., and passed one of the largest ice islands seen in the voyage, with several smaller. The weather was foggy, with sleet; and, with the wind North by West, she stood to N.E. over a sea strewed with ice.

"At 6^h 30′ next morning, as we were standing N.N.E., with the wind at West, the fog very fortunately clearing away a little, we discovered land ahead, 3 or 4 miles distant. On this we hauled the wind to the North; but finding that we could not weather the land on this tack, we soon after tacked in 175 fathoms of water, 3 miles from the shore, and about half a league from some breakers. The weather then cleared up a little more, and gave us a tolerably good sight of the land. That which we had fallen in with proved to be three rocky islets of considerable height. The outermost terminated in a lofty peak like a sugar loaf, and obtained the name of Freezeland Peak, after the man who first discovered it. Behind this peak, that is, to the East of it, appeared an elevated coast, whose lofty snow clad summits were seen above the clouds. It extended from N. by E. to E.S.E., and I called it Cape Bristol, in honour of the noble family of Hervey. At the same time another elevated coast appeared in sight, bearing S.W. by S., and at noon it extended from S.E. to S.S.W., from 4 to 8 leagues distant; at this time the observed lat. was 59° 13½′ S., lon. 27° 45′ W. I called this land *Southern Thule*, because it is the most southern land that has yet been discovered. It shows a surface of vast height, and is everywhere covered with snow. Some thought they saw land in the space between Thule and Cape Bristol. It is more than probable that these two lands are connected, and that this space is a deep bay, which I called Forster's Bay.

---

* *The singular habits of the penguins have been noticed in pages 38 and 143; they are also described by Captain Weddell, pages 55, 57*; and by Mr. Webster, Vol. I., p. 118.

At 1^h, finding that we could not weather Thule, we tacked and stood to the North; and, at 4^h, Freezeland Peak bore East, distant 3 or 4 leagues. Soon after, it fell little wind, and we were left to the mercy of a great westerly swell, which set right upon the shore. We sounded, but a line of 200 fathoms found no bottom. At 8^h the weather, which had been very hazy, clearing up, we saw Cape Bristol bearing E.S.E., and terminating in a point to the North, beyond which we could see no land. This discovery relieved us from the fear of being carried by the swell on the most horrible coast in the world, and we continued to stand to the North."

In this manner the other points were discovered; but the cliffs alone were all which was to be seen like land.

On the 2nd of February the Candlemas Isles were seen. They appeared to be of no great extent, but of considerable height, and covered with snow. A small rock was seen between them, and perhaps there may be more; for the weather was so hazy that the sight of them was soon lost. At noon, on the 3rd, the ship was in lat. 56° 44′ S., lon. 25° 33′ W., and was attempting to stand to the South, but a shift of wind made it necessary to tack, and proceed to the eastward. On this course several ice islands and some loose ice were met with.

In closing his remarks on these lands, Captain Cook adds, "I concluded that what we had seen, which I named Sandwich Land, was either a group of islands, or else a point of the continent. For I firmly believe that there is a tract of land near the pole, which is the source of most of the ice that is spread over this vast Southern Ocean. I also think it probable, that it extends farthest to the North opposite the Southern Atlantic and Indian Oceans; because ice was always found by us farther to the North in these oceans than anywhere else, which I judge could not be if there were not land to the South; I mean a land of considerable extent."

Routes of Captain John Biscoe, to the Eastward and South-eastward of the Sandwich Lands.

Captain Biscoe has satisfactorily proved the Sandwich Land of Captain Cook to be a group of islands, as will be shown by the following extracts from his journal. This gentleman commanded the brig *Tula*, belonging to Messrs Enderby, and left the port of London, on a South Sea sealing voyage, July 14, 1830, but with special instructions from her owners to endeavour to make discoveries in a high southern latitude. The brig was liberally equipped, and accompanied by the cutter *Lively*, as a tender.

After touching at the Cape Verde Islands for salt, the two vessels arrived off the Falkland Islands on the 8th of November, and anchored in Port Louis, Berkeley Sound, on the 10th. Captain Biscoe speaks highly of the convenience of this port for vessels bound round Cape Horn; as fish, bullocks, and fresh water, &c., can be so easily procured. On the 27th they again proceeded to sea, and on their way kept a vigilant look-out for the Auroras, as we have before noticed. On the 10th of December many icebergs were seen. On the 20th an island was made, which proved to be the *Montagu Land* of Captain Cook, a terrific rock, covered with ice, snow, and heavy clouds; and subsequently other points of these islands were seen, as shown on the chart. These are placed by Captain Biscoe about 50′ to the West of the longitudes given by Captain Cook. The thermometer here stood at 29° in the air, and 31° in the water.

Several following days were spent in endeavouring to get to the southward, and, if possible, also to the westward, there being strong indications of land in that quarter; but these were all unsuccessful. The field ice was either quite continuous and unbroken, or where bays were formed in it, and entered, these were found open but a little way, and the vessels were obliged to return as they went in. Fortunately the water was remarkably smooth, even when the wind, which hung to the westward, blew strong; and this circumstance both facilitated the manœuvring of the vessels, and encouraged their crews to persevere, by confirming their surmises as to the existence of land in the neighbourhood. On the 29th of December, at noon, the lat. observed was 59° 11′, lon. 24° 22′ W.; but as the wind was then blowing hard from the S.W., farther investigation in that quarter was abandoned; the islands before seen were again sighted, and the longitudes of their centres being further determined, and confirmed to be about 27° W., sail was made to the eastward.

On the 5th of January, 1831, the *Tula* and her companion were in lat. 59° 9′, lon. 21° 52′, closely skirting the field ice the whole way, and examining every inlet, in hopes of finding a passage through it to the southward, and, as they hoped, to clear water. In this, however, they were constantly disappointed; and, on the contrary, on the evening of the 7th, says Captain Biscoe, "my hopes in this direction were destroyed, for I suddenly found myself at the head of a bay of firm ice, with a view, from the mast-head, to an extent of at least 20 miles in every direction; and, to the southward, the ice appeared so smooth and firm, that any one might have walked on it. The weather, too, was now so clear, that, I am convinced, land of any considerable elevation might have been seen at 80 or 90 miles. What further astonished me was, that there were no living animals of any kind about this ice, with the exception of one or two small petrels, not even any penguins, which at other times had been very numerous. These circumstances almost convinced me that this ice must have been formed at sea; the temperature of the water being then 30°, and that of the air 31°, with frequent and very heavy falls of snow. Nevertheless there were strong indications of land in the S.W., though none was actually within our horizon, and the water continued very smooth."

From the 7th to the 16th of January the course made good was nearly due East; the lat. being then 59° 16′ S., lon. 7° 14′ W. The wind had hung during the interval to the South, with fresh breezes, on two occasions, from the S.W., and a considerable sea, as though the distance from land was now increasing. The ice was also from time to time more broken into bergs, fifty-eight of them being at one time in sight together; and on the 16th the temperature of the water was 34°, of the air in the shade, 45°, in the sun, 77°, with a corresponding genial warmth to the feelings of the crew. The wind also veered now to the westward, and the vessels were hauled up to the S.E., steering between icebergs and broken patch ice; but scarcely any birds were yet to be seen; though on the 20th two nellies were observed, and one albatross, being the first since leaving the latitude of South Georgia.*

Schooner *Wasp*, from the eastward, 28th of February, 1823.—The cheering cry of "Land, ho!" resounded from aloft. This proved to be the *Candlemas Isles*, the most northerly isles of Sandwich Land; lat. 57° 10′ S., lon. 26° 59′ W. These two islands are of no great extent, but one of them is of considerable height; both are burning volcanoes, and the most western is burnt down nearly to a level with the sea. We continued examining these islands toward the South, until we arrived at the Southern Thule, where, on the N.E. side of the westernmost island, we found a good harbour. In this group we saw nine burning volcanoes; fire in abundance, but no fuel for the *Wasp*. Three of these islands had vomited out so much of their contents, that their surfaces were nearly even with the water. All the islands are entirely barren. Those parts which have not been consumed by internal fires are very high, and covered with perpetual snow; the rest is broken land. The westernmost point of the Southern Thule is in lat. 59° 35′ 10″ S., lon. 27° 42′ 30″ W. Not a single fur seal was discovered, and only about 400 sea elephants, &c.—*Capt. Morrell.*

33.—SOUTH SHETLAND.

Captain Cook's concluding remark, given in the preceding page, has been verified, in some measure, by the discovery of the archipelago now called SOUTH SHETLAND. For the first notices of this discovery the world is indebted to Mr. William Smith, commander of the brig *Williams*, of Blythe, by whom the land was first seen in the month of February, 1819. The *Williams* was, at this time, on a voyage from Buenos Ayres to Valparaiso, and stretching far to the South. On the 19th land or ice was seen in lat. 62° 40′, and near lon. 62° W., then bearing S.E. by S., about 2 leagues. Hard gales, with flying showers of snow, and fields of ice, a combination of adverse circumstances, prevented at this time an exploration of the coast; and on the brig's return to the River Plata, in the month of May, similar circumstances prevented any farther discovery; but on a subsequent voyage from Monte Video to Valparaiso, in October of the same year, the *Williams* again made the land. Captain Smith, in his journal, says, "I, to my great satisfaction, discovered land on the 15th of October, at 6ʰ p.m., in lat. 62° 30′, lon. 60° W., by chronometer, bearing distance about 3 leagues; hazy weather; bore up and sailed toward it; at 4 miles distant sounded in 40 fathoms, fine black sand; an island bearing E. by S. At S.E. by E. bearing, sounded in 60 fathoms, same bottom; hauled off during the night to the northward; at daylight stood in for the land again, at 3 leagues distance. From the body of the islands sounded again, 95 fathoms, fine sand and ooze; at 8ʰ, weather clear and pleasant, saw the main land bearing S.S.E., distance from the islands about 3 leagues. Having run as far as the cape, we found the land trend off to the N.E. Coasting to the eastward, and sounding, found it similar to the former, fine sand. A point bearing E. ½ S., hauled in for it; got the island to bear N.W., distance half a league. Soundings regular from 20 to 35 fathoms, good bottom, sand and gravel. Finding the weather favourable, we down boat, and succeeded in landing; found it barren, and covered with snow. Seals in abundance.

---

* The remainder of the route is described in the Journal of the Royal Geographical Society, *Vol. III., pages 107, &c.*, and the whole of it is shown on the large Chart of the World, published by *Mr. Laurie.*

"The boat having returned, which, when secured, made sail offshore for the ensuing night; in the morning altered the course so as to keep the land to the southward in view; having doubled the point above mentioned, the land then took a south-easterly direction, varying to the eastward; weather thick and squally, with snow. I thought proper, having property on board, and perhaps deviating from the assurance, to haul off to the westward on my intended voyage. Strong variable winds. Made another cape, and could perceive some high land to the westward of it, and stretching in a S.W. direction. The weather becoming thick and squally, we made sail to the westward, having sailed 150 miles to the W.S.W. The weather moderating, saw another headland bearing by observation E.N.E., distance 10 leagues; very high. Observed in lat. 62° 53′ S., lon., by chronometer, 63° 40′ W. of Greenwich; named this Smith's Cape. Found the land to extend from the cape in a southerly direction. Shaped my course for Valparaiso, where I arrived on the 24th of November, after a passage of sixty days from Monte Video."

Additional information on these lands was subsequently communicated by Captain Walker, of the ship *John*, of London. This vessel, in 1821, arrived from South Shetland in ninety-eight days, with 12,000 seal skins, and afterwards returned for another cargo. The *John* was blown off in a gale of wind, and lost two anchors and a cable; the bottom being very rocky, other vessels have met with similar misfortune.

Captain Cook's description of the Isle Georgia well applies to South Shetland. The country consists of numerous islands, without a vestige of vegetation. A species of moss only is found upon the rocks near the shore; eternal snows covering the more remote parts, which are mountainous. Nature in these regions assumes the most sterile and forbidding features; the thermometer was at no time below the freezing point; but the melting snows near the shore so completely saturate the soil, as to check all vegetation. A species of coal was found in abundance, which burnt very well, thus affording the means, if wanted, of replenishing the fuel. The rise and fall of the tide is about 12 feet. Shrimps and penguins beyond all conception numerous. The islands, headlands, &c., have been named, and observations ascertaining the latitude and longitude repeatedly made. Part of an anchor stock, evidently Spanish, being bolted with copper, and bearing certain marks, was found on shore, and is presumed to be the only vestige now remaining of a 74-gun ship of that nation, which sailed from Spain, bound to Lima, in 1819, and has not since been heard of.

Several United States' vessels have visited South Shetland; and an American account states that some of the harbours are very good, vessels in them being land-locked. Of the first three months of the year 1821, the mildest experienced there was March; but the seals had mostly retired to the water. A solitary spot or two of something like grass were the only marks of vegetation; no field ice was seen, but innumerable islands were floating about. The flesh of the young seals was often eaten, and was not disagreeable.

Captain Dan. W. Clark, of the ship *Hersilia* (an American), reported, that he penetrated to the 66th degree of latitude, where he observed lands stretching farther to the South, the extremities of which he could not ascertain. The whole, even in summer, was blocked up with snow and ice, except in particular places frequented by seals.

An early account of South Shetland stated that sperm whales were seen about the coasts; and it cannot be questioned that such whales may be occasionally here; but we have the authority of Captain Laurence Frazier for stating, that the whales hereabout are mostly fin backs.

About twelve months after the first discovery of South Shetland, the British naval commander-in-chief on the South American station directed a farther exploration; and for this purpose a hired brig, the *Slaney*, was sent, under the command of Mr. Edw. Bransfield. "We sailed," says the reporter, "from Valparaiso on the 20th of December, 1819, but did not arrive on cruising ground till the 16th of January, 1820, having been almost constantly harassed with baffling winds and calms till we arrived in a high southern latitude. On that day, however, we had the good fortune to discover the land to the south-eastward, extending on both bows as far as the eye could reach. At a distance, its limits could scarcely be distinguished from the light white clouds which floated on the tops of the mountains. Upon a nearer approach, however, every object became distinct. The whole line of coast appeared high, bold, and rugged; rising abruptly from the sea, in perpendicular snowy cliffs, except here and there where the naked face of a barren black rock showed itself amongst them. In the interior, the land, or rather the snow, sloped gradually and gently upward into high hills, which appeared to be situated some miles from the sea. No attempt was made to land here, as the weather became rather threatening, and a dense fog come on, which soon shut everything from our view at more than 100 yards distance. A boat had been sent away, in the meantime, to try for anchorage; but they found the coast completely surrounded by dangerous sunken rocks, and the bottom so foul, and the water so deep, that it was not thought prudent to go nearer the shore in the brig, especially as it was exposed to almost every wind. The boat brought off some seals and penguins, which had been shot among the rocks; but they reported them to be the only animated objects they had discovered. The latitude of this part of the coast was found to be 62° 26′ S., and its longitude to be 60° 54′ W.

"Three days after this we discovered and anchored in an extensive bay, about 2° farther to the eastward, where we were enabled to land, and examine the country. Words can scarcely be found to describe its barrenness and sterility. Only one small spot of land was discovered on which a landing could be effected upon the main; every other part of the bay being bounded by the same inaccessible cliffs which we had met with before. We landed on a single beach, on which there was a heavy surf beating, and from which a small spring of fresh water ran into the sea. Nothing was to be seen but the rugged surface of barren rocks, upon which myriads of sea fowls had laid their eggs, and which they were then hatching. These birds were so little accustomed to the sight of any other animal, that, so far from being intimidated by our approach, they even disputed our landing, and we were obliged forcibly to open a passage for ourselves through them. They consisted, principally, of four species of the penguin, with albatrosses, gulls, pintadoes, shags, sea swallows, and a bird about the size and shape of a common pigeon, and of a milk white plumage, the only species we met with that was not web footed. We also fell in with a number of the animals described in Anson's voyage as the sea lion, and said by him to be so plentiful at Juan Fernandez, many of which we killed. Seals were also pretty numerous; but, though we walked some distance into the country, we could observe no trace either of inhabitants or of any terrestrial animal. It would be impossible for any but beasts of prey to subsist here, as we met with no sort of vegetation, except here and there small patches of stunted grass growing upon the surface of the thick coat of dung which the sea fowls left in the crevices of the rocks, and a species of moss, which occasionally we met with adhering to the rocks themselves. In short, we traced the land 9° or 10° East and West, and about 3° North and South, and found its general appearance always the same; high, mountainous, barren, and universally covered with snow, except where the rugged summits of a black rock appeared through it, resembling a small island in the midst of the ocean; but from the lateness of the season, and the almost constant fogs in which we were enveloped, we could not ascertain whether it formed part of a continent, or was only a group of islands."

A full description of the sea elephants and seals of these regions, with their peculiar *habits, is given by Captain* Weddell, in the relation of his voyages, pages 134 to 142; in conclusion, he observes, "The quantity of seals taken off these islands, by vessels from different parts, during the years 1821 and 1822, may be computed at 320,000, and the quantity of sea elephant oil at 940 tons. This valuable animal, the fur seal, might, by a law similar to that which restrains fishermen in the size of the mesh of their net, have been spared to render annually 100,000 furs, for many years to come. This would have followed from not killing the mothers till the young were able to take the water; and even then only those which appeared to be old, together with a proportion of the males, thereby diminishing their total number, but in slow progression. This system is practised in the River Plata. The system of extermination was, however, practised at Shetland; for whenever a seal reached the beach, of whatever denomination, he was immediately killed, and his skin taken; and by this mean, at the end of the second year, the animals became nearly extinct; the young, having lost their mothers when only three or four days old, of course all died, which at the lowest calculation exceeded 100,000!"—*Weddell*, pages 141, 2.

PARTICULAR DESCRIPTION.—On the 12th of February, 1832, Captain Biscoe, in the *Tula*, was advancing from the westward, and in lat. 66° 27′, lon. 81° 50′, many birds were seen, albatrosses, penguins, Cape pigeons, &c., with several hump and finned back whales; and no fewer than 250 ice islands were counted from the deck. On the 15th land was seen, bearing E.S.E., but at a great distance. Lat. of the ship 67° 1′, lon. 71° 48′. On the following morning the land was ascertained to be an island, and called *Adelaide Island*, in honour of the Queen; and, in the course of the ensuing fortnight, it was further made out to be the westernmost of a chain of islands, extending E.N.E. and W.S.W., and fronting a high continuous land, which Captain Biscoe believes to be of great extent. The range of isles has since been called *Biscoe's Range*.

The main land was named by Captain Biscoe *Graham's Land*, but it is unquestionably the same which was marked in the old charts by the name of *Gherritz Land*, it having been discovered in 1599, by Dirk Gherritz, of the *Good News* yacht, one of the five Rotterdam ships which doubled Cape Horn, and which he reported to lie in 64° South.*

Adelaide Island is described as having a most beautiful appearance, with one high peak shooting up into the clouds, and occasionally appearing both above and below them, and a lower range of mountains extending about 4 miles from North to South, having only a thin covering of snow on their summits, but toward their base buried in a field of snow and ice of the most dazzling brightness, which slopes down to the water, and terminates in a cliff of 10 or 12 feet high, riven and splintered in every direction, to an extent of 200 or 300 yards from its edge. At a distance of 3 miles no bottom could be found with 250 fathoms of line; and around all the islands the water was considerable. One island, in lat. 66° 20′, lon. 66° 38′, has many bays; and forms, with the main land behind, a good harbour for shelter, but the bottom is rocky. No living animal was found on any of these isles, and not many birds, although only a few miles to the northward they were very numerous.

On the 21st of February, Captain Biscoe succeeded in landing on the main land; the highest mountain in view he called *Mount William*, after his late Majesty. The place was in a deep bay, in which the water was so still, that could any seals have been found, the vessels could have been easily loaded, as they might have been laid alongside the rocks for the purpose. The depth of water was also considerable, no bottom being found with 20 fathoms of line almost close to the beach; and the sun was so warm that the snow was melted off all the rocks along the water line, which made it more extraordinary that they should be so utterly deserted. The lat. of Mount William appeared, from observation, to be 64° 45′, in lon. 63° 51′.

Captain Biscoe, after this, repaired to the South Shetland Islands, where he was driven ashore, lost his rudder, and very narrowly escaped shipwreck.

The northern point of what was considered as the main land by Captain Biscoe, was seen by him, at the distance of about 10 leagues, on the 27th of February, 1832; and the appearance of a range of islets, probably eminences on the main, continued in a north-westerly direction to the distance of 10 leagues farther, and not remote from a spot previously visited by the *Chanticleer* in 63° 26′ S., and 64° 6′ W., January, 1829. To this point Captain Foster imparted the name of *Cape Possession*, having here taken formal possession in the name of King George the Fourth. The coast from the cape takes a south-westerly direction, until lost to the eye on the horizon, where it appears to terminate in a mass of islands, of a bleak and dismal aspect, the same which were afterwards seen by Captain Biscoe.

---

* It is also the *Clarence Land* of Captain Foster, 1829, who seems not to have been aware that this name had been given to a principal isle of the group to the north-eastward.

Early in the morning of the 5th of January, 1829, H.M. Sp. *Chanticleer*, from Staten Island, came in sight of *Smith's Island*, the westernmost isle of South Shetland. Fine weather of several preceding days was now succeeded by snow storms, which added not a little to the inhospitable appearance of the island. The vessel was also surrounded by icebergs; but with daylight, and no night, she was enabled to thread her course among them. The island was covered with snow, excepting on the sides of the precipices and the faces of the rocks, where it could not lie; and these, from their black appearance, presented a striking contrast with the high snow-clad land.[*]

On the 7th of January, after passing Smith's Island, the *Chanticleer* was coasting, with fine clear weather and a light easterly breeze, the coast called *Trinity Land*, to the southward of South Shetland. It appeared to be of considerable extent, with mountains of 6,000 or 7,000 feet in height, and covered with eternal snow. The day was fine, and numerous whales (fin-backs) were spouting up columns of water, and blowing about in all directions; while flocks of variegated petrels, or pintadoes, were circling around, and sedulously watching these leviathans of the deep for the purpose of obtaining some sort of food or aliment from their slimy exuviæ; and penguins innumerable were popping up their heads here and there, skipping and starting out of the water in the full enjoyment of their gambols. From the deck of the *Chanticleer* 84 large icebergs were in sight.

The first chart of these Islands, for the use of navigators, was constructed by the late *Mr. Geo. Powell*, commander of the ship *Dove*, and published by Mr. Laurie, in 1822. In the composition of it, exclusive of his own observations and sketches, Mr. Powell was materially assisted by several intelligent commanders, both English and American, and he has added to the islands properly *South Shetland*, another group, considerably more to the East, which he discovered on the 6th of December, 1821. The latter lies between the parallels of 60½° and 60° 48′, and between the meridians of 44° and 47°. About it were innumerable icebergs and ice islands. These isles appear in the chart under the name of *Powell's Group* or *South Orkney*, and to the principal isle Mr. Powell imparted the name of *Coronation Island*, but *Pomona* or *Main Land* has since been proposed by Mr. Weddell, as a more appropriate name.

Captain Weddell has given an imperfect sketch of Powell's Group, under the name of *South Orkneys*. These islands he fell in with on the 12th of January, 1823; and he describes their coasts as, if possible, more terrific in appearance than those of South Shetland: the tops of the islands, for the most part, terminating in craggy towering peaks, which look not unlike the mountain tops of a sunken land. The loftiest of these summits, towering up to a point, in a clear day may be seen at the distance of 15 leagues.

By observations made on the 14th, it appeared that Saddle Isle, one of the easternmost islets of the group, lies in lat. 60° 37′ 50″, lon., by mean of three chronometers, 44° 52′ 45″. Mr. Powell placed this isle in 60° 36′ S., and 44° 32′ W., and this, we conjecture, is nearest to the truth.

Captain Powell's detail and general remarks accompany the chart above mentioned, under the title of '*Notes on South Shetland*,' and to these notes is appended a Meteorological Journal of the Temperatures of the air and water on every day, from the 8th of

[*] Captain Weddell, in his notice of South Shetland, states that he was the first person who landed upon Smith's, by him called James', Island, the highest and most forbidding of all. The summit he estimated to be nearly 2,500 feet above the level of the sea.

This island was seen, as above mentioned, by Captain Foster, in the *Chanticleer*, who named its summit *Mount Beaufort*, in respect to Captain Beaufort, R.N., Hydrographer to the Admiralty, &c. This summit he states to be about 6,600 feet above the level of the sea, and to have been seen at the distance of 85 miles.

Captain Foster adds, that the position of Mount Beaufort being tolerably well ascertained, may afford to those who, having met with adverse winds off Cape Horn, are compelled to pass its meridian to a high southern latitude, the mean of ascertaining their longitude with tolerable precision, either by its bearing when on a known parallel, or by bearings from two stations sufficiently apart for that purpose, and connected by mean of a self-registering log; and thus may be obtained the position of the ship.—*Webster*, Vol. II., p. 275.

November, 1821, to the 26th of February, 1822.* To the notice of the climate, given on page 13, we now add the following:—

Remarks on the Winds, by Captain Robert Fildes, of Liverpool.

Nearly all the misfortunes that have happened in South Shetland have been in gales of wind from the eastward, which frequently prevail here, and blow with tremendous fury; generally accompanied with heavy falls of snow. No less than 7 vessels have been lost, and all with easterly gales, excepting the *Clothier*, an American, which struck on a sunken rock.

In the years 1820, 1821, and 1822, four-fifths of the gales were from the eastward; though we had all looked for harbours sheltered from the westward, under the impression that we should have most to fear from that quarter.

In fine weather, the winds from the S.W. and N.E. are about equal, not keeping long in either quarter. Indeed, with very few exceptions, the winds are always along the land, which renders this coast far less dangerous when under sail than it would otherwise be.

The south-westers here, much like the north-westers at home, are attended with a fine clear sky, and generally sweep away all the fog and sleet of the light north-westers. In two seasons I recollect only one gale from the N.W., which was very heavy. I was then in Blythe Bay, and it was perfectly smooth, though the sea outside was in a manner overwhelming.

It would appear, if a parallel may be drawn from these two seasons, that gales of wind on the land are very infrequent. I have noticed that the wind on the land is generally light, with thick, dirty weather; however, the gales of wind after the middle of February begin to increase in strength, and it is then not worth any one's while to stop longer on the coast. Were I bound round Cape Horn, and to meet with adverse winds, I would not keep hugging the wind, and going about with every slant, but check the topsail-yards in, and keep my reach to the southward, when I should be sure to be not long without an easterly wind, with which I could soon get sufficient westing, (the degrees of longitude being so short,) and such an offing from the western part of Tierra del Fuego, as to make for me a S.W. wind a fair one.

The danger of falling in with ice is almost chimerical, there being no low drift ice on the North side of Shetland; and in two seasons I only saw three ice islands.

Remarks on the Tides of South Shetland, by the same.

The tides on the North coast of South Shetland are very irregular; it being sometimes high water for 24 hours together; at others it flows tide and half-tide, and remains for about 3 or 4 hours high water, and then ebbs again: though there is, in general, one flood and one ebb every 24 hours. Gales of wind raise the tide sometimes much above its natural level; which may account, in some measure, for many skeletons of whales, which lie in many places 12 or 14 feet, at least, above high water mark, and many yards from the sea shore. In *Blythe Bay*, (Desolation Island,) I have frequently noticed an easterly gale to raise the water considerably above its common height; and the brig *Lady Troubridge*, of Liverpool, that drove on shore on Christmas Day, 1820, was found, in the next season, forced up nearly high and dry. This was on King George's Island.

Near the mouths of the straits the tides run very strong, and in various directions, which renders the navigation in light winds both unpleasant and unsafe. The flood tide on the coast sets to the eastward.

I have been informed that, when the brig *Williams* was on the survey, they found the current running always strong to the eastward; but as they appear to have taken only a line of coast, (it being, without doubt, dangerous for one vessel alone to approach too near,) they could not be expected to have had so good an opportunity of experiencing how the tides run in with the land, as those who have been continually passing and re-passing in-shore.

---

* Among the names of the commanders who materially assisted in the formation of the chart, we particularly notice those of John Walker, Robert Fildes, Ralph Bond, and Charles Robinson. The latter communications of Captain Fildes are copious and circumstantial, and will appear should a second edition of the '*Notes*' be called for.

In a S.W. gale, I have seen the tide run directly to windward, a full league from the coast, at the rate of 2 or 3 knots; and *vice versâ*, to the eastward again, when the brig *Williams*, and the ship *Indian*, were at once blown out of Blythe Bay with a gale of wind from the eastward. The *Indian*, which I was on board of, drove 10 leagues to the westward; and the *Williams*, though lying-to, drove up 7 leagues to the eastward, and dead to windward two-thirds of the way; which evidently showed that the two vessels had received the impulse of two contrary streams.

From all the observations which I have been able to make, I think the flood and ebb, in moderate weather, runs backward and forward in the offing as far as 2 leagues from the outer points of the land, taking the sweep of the bays: but, be it understood, that it sometimes runs much longer both ways, and likewise stronger than it does at others. Its distance from the coast also varies outside these limits. I have found the current run at least a knot, in the same direction as the wind blows.

From these remarks it will appear that it is not easy to give any satisfactory account of the tides, so as to reduce them to anything like a regular theory. One circumstance, however, may be worthy of notice:—fragments of the wrecks of the *Cora* and *Clothier* were all invariably drifted to the westward. Cape Shirreff and the North beaches were scattered all over with them, and not one single particle was ever found to the eastward. The *Cora's* were easily identified, being either cedar or mahogany. On the South side of the land, it is pretty generally admitted, that the motion of the water is, on the contrary, toward the *eastward*, and carrying with it vast quantities of ice, in the direction of the coast, toward Sandwich Land.

In his General Remarks, Captain Powell says, "All the northern part of the coasts of South Shetland abounds with islets, rocks, and breakers, while the southern coasts are entirely clear of these dangers; but, in the early part of the spring, the southern sides are blocked with ice, which comes from the land to the South of and opposite to it; when you come up as far as the South beaches, you again meet with rocks and breakers."

The best harbour is formed by *Deception Island*, [lat. 62° 56′, lon. 60° 32′,] which island, or *shell* of an island, is certainly one of the most singular productions of nature; the land is high, and bold on every side, with a narrow opening, of about a cable's length, on its S.E. side, leading to a very capacious basin. The isle is a volcanic production; its shores on either side are bold; and pumice stone, with other substances, indicate its origin. There are also several hot springs, some of which are of a temperature sufficient to boil an egg. The basin is 5 or 6 miles across. At its mouth you will have 3, 4, and 7 fathoms of water, and increase very rapidly as you enter; from 7 fathoms you increase to 10, then 18, 27, 32, and then, a little within this, you will get no bottom at 60 fathoms. On the N.W. side of the basin there is a very fine cove, capable of containing several vessels, in about 4 or 5 fathoms of water, and a bottom of good clay. From the entrance of the basin up to the cove the course is N.W. by W.

Deception Island was one of the pendulum stations of the late Captain Foster, and a copious description of it is given by Mr. Webster, in his Vol. I., pp. 144 to 165; and by Captain Foster, in Vol. II., 277, 280. Its situations, as shown in the Table of Positions, is lat. 62° 56′, lon. 60° 32′;* and from the latter the longitudes of the other islands have been inferred.

The following remarks on Deception, &c., have been given from a journal of the expedition.

"Among ice islands in a boisterous sea, attended with fogs, rain, and gales of wind, the little *Chanticleer* had no easy task to get to South Shetland. On the 10th of January, 1829, the Island of Deception was discovered, and a safe anchorage in the *interior* of it was shortly found. This island is justly entitled to its appellation, and is one of the most extraordinary productions of nature. Its formation is entirely volcanic, the principal part being composed of lava, ashes, and ice. The shores rise to an elevation of some hundred feet, particularly on the North side, which is considerably higher than the South; and being circular, of about 7 miles in diameter, it appears from a distance to be one large mass from shore to shore. In searching for a harbour to receive the *Chanticleer*, an opening was discovered, about 200 feet wide, on its S.E. side; and on farther examination, it was soon found that a large circular basin, of about 5 miles diameter, occupied nearly the whole *interior* of the island, the external shores forming a perfect barrier or wall, thereby affording the utmost security within. The depth in the centre of this basin was 97 fathoms, rather too much for anchorage, but a small cove on its eastern side gave ample security to the *Chanticleer*.

---

* *Messrs.* Fildes and Powell make the latitude 63° 3′, while their longitude agrees very *nearly with that of Captain Foster.*

"The pendulum was employed here, and the necessary observations performed, whilst the officers of the *Chanticleer* surveyed and explored this extraordinary island. Several small coves were found on the borders of the basin; and some stones placed on each other, in a rude clumsy manner, near one of them, were discovered to have been used by the crew of sealers for the purpose of boiling their oil. Nor were these the only traces of the sealing vessels; for, in the exploring expeditions which were constantly going forward, another pile of stones, on a neighbouring eminence, was found, on examination, to contain the corpse of a man. He had evidently been a sailor belonging to one of these vessels, but of what country could not be discovered. There was nothing found near him to indicate how he had died, nor at what date. The stones were carefully replaced, and a notice left on the spot, that his remains might not again be disturbed.

"The external as well as the internal shores of this island, from the friable nature of its materials, present some very remarkable appearances. The eastern side is entirely faced with cliffs of ice, about 300 feet in height, which the constant washing of the sea forms into singularly fantastic shapes. Similar cliffs are also found on the South and S.W. sides, and their base is bounded with a beach of ashes and lava, which extend round the whole island at low water. The examination of the basin was attended with considerable difficulty, arising from the small ashes and dust which were carried into it from the island. Seals, and their companions, penguins and sea-leopards, were the only inhabitants found in this desolate island, which affords not the slightest verdure. Streams of water, at a temperature of 140° and 160° of Fahrenheit, were found issuing in some places from the sides of the hills, and running into the basin, the water of which was scarcely above the freezing point. It is generally supposed that this basin was formerly the crater of a volcano, and that the sea has found its way into it by washing out the narrow passage by which the *Chanticleer* entered. How long it has been resorted to by sealing vessels is unknown."

BRIDGMAN'S ISLAND.—Near the centre of the Shetland group is *Bridgman's Isle*, in lat. 62° 4′, lon. 57° 0′, apparently another volcanic production. Captain Weddell, on passing within 200 yards of it, observed smoke issuing through the fissures of the rock, and apparently with much force. The figure of the island is nearly round; it is very small, but 400 feet in height, partaking of the form of a sugar-loaf.

REMARKS ON APPROACHING SOUTH SHETLAND FROM THE NORTHWARD, BY CAPTAIN FILDES.

On advancing from the northward toward *Livingston's* or the *Main Island*, the land will appear in mountains of a vast height, and covered entirely with snow; the base of them terminating in perpendicular ice cliffs. The whole has an awfully grand, though terrific and desolate, appearance; the snowy mountains showing themselves, one over another, far above the clouds, and exciting in the mind a devotional reverence on the wonders of the Almighty: and even if surrounded on all sides with rocks and breakers, the mind is forced into pious contemplation on the grandeur of the scene.

On this side of the group, in lat. 62° 20′, lon. 59° 45′, is a small isle, named *Table Island*, which is by far the most remarkable hereabout,* and will always be an infallible mark for any one approaching, as it is not possible to mistake it for any other land. All strangers, therefore, should make this their land-fall, particularly in the early part of the season, for then the land is not so easily made out, it having a great quantity of snow upon it, which may, at times, deceive those best acquainted. Its top appears as level as a bowling-green, and its sides resemble a wall. In the upper part of the N.E. end of it, is a chink, or division, which from some situations may be seen.

34.—LOUIS PHILIPPE LAND, JOINVILLE LAND, &c.

To the southward of the South Shetland group, is the land discovered by the late Admiral D'Urville, of the French Marine, and named by him as above. From a letter, addressed by him to the French minister, contained in the *Bulletin de la Société de Géographie de Paris*, 1838, p. 275, we copy the following notice of his exploration :—

---

* See the view on the chart by Captain Powell.

"On the 27th of February, 1838, after a long stretch toward the South, through much ice, we came upon these mysterious lands; and, in spite of the complicated obstacles against which we had to contend, both on account of the continued bad weather, and from the fog and ice, in the space of about eight days we succeeded in tracing exactly their outline, for a distance of about 120 miles, between 63° and 64° South lat. The land, which is crowned with immense peaks,* is covered by continual snows, of unknown depth. Were it not for the blackish rocks, rendered visible by the melting of the snows which form their limits on the coast, one would often be scarcely able to distinguish them from the numerous fields of ice which surround them. The principal of these places has received the name of Louis Philippe Land, in honour of the king, who first conceived the idea of making these explorations towards the South Pole. Other islands have received the name of various persons who have exhibited an active interest in our expedition, more especially of that illustrious statesman who arranged the plan of our voyage. Lastly, the mountains, capes, and islands will recall the memory of the officers who took part in our dangers."

These distant and desolate regions were also visited and examined by the Antarctic expedition under Sir James Ross in Dec. 27, 1842—Jan. 30, 1843.

During this exploration many additional features, islands, capes, inlets, &c., were discovered and named. The chief of these are the Danger Inlets to the westward of Joinville Land; an extensive gulf, named Erebus and Terror Gulf, the appearance of which led to a supposition that there was a passage through between Joinville and Louis Philippe Land into Bransfield Strait; an inlet called Admiralty Inlet to the southward of Louis Philippe Land, which was found to extend nearly a degree further South than D'Urville explorated. Many most interesting particulars are given in the account of Sir James Ross's Expedition, Vol. II., chap. 12. Great numbers of black whales of the largest size were seen, and the whole of the land appeared to be volcanic.

POLAR ICES.—The barrier of ice which surrounds the Antarctic Pole, appears to be variable in its extent and locality. We have before noticed the great quantity of ice which had drifted northward, towards the Cape of Good Hope, during the year 1840, or at the period that Capt. Sir James Clark Ross and his companions were so successfully pursuing their discoveries on the opposite side of, and in close proximity to, the South Pole. It may have been owing to some great disruption of the barrier, that allowed Captains Ross and Crozier to penetrate so near to the Pole; and a similar occurrence may have taken place, at the time that our enterprising countrymen, Captain Weddell, proceeded to higher southern latitudes than any previous navigator; he having attained to 74° 15′ S., in lon. 33¼° W., between the meridians of the Sandwich Land and the South Orkneys: this was in January, 1823. In February, 1838, where Captain Weddell found the sea clear of ice at the commencement of his bearing to the southward, Admiral D'Urville was prevented from proceeding southward by a compact and impenetrable barrier of ice. In the volume above mentioned, page 121, is a further communication from him, relative to this part of the voyage :—

"Having escaped from our prison we continued along very close to the barrier for about 300 miles, without finding any opening. This time it was uniformly West and East, without the slightest appearance of a passage. On the 15th of February, 1838, having come to 30° 40′ W., lon., and having traversed all the parts by which Weddell says that he penetrated without having seen a single field of ice, and finding the barrier take a northerly direction towards the Sandwich Lands, I judged that it was time to quit this tedious search. The crews were much fatigued; the nights already long, redoubled the danger of this adventurous navigation, and I could no longer continue it without a sort of blind imprudence.

"Hence we steered to the West: we made successively the South Orkneys; then the eastern part of South Shetland, where we rectified some grave errors; then we picked our way afresh to the southward; thence, between 63° and 64° S. lat., for the space of nearly 180 miles, we exploded the lands before mentioned, until then completely unknown; which we did without any accident.

"At last we cleared entirely Bransfield Strait, which no ship of war had ever before traversed; and on the 7th of March, we quitted definitively the southern lands, and with them the ices. For fifty-two days, we had not been a day without being surrounded with them, and we frequently counted from 60 to 80, and upwards, around us, independent of those which often barriered our route.

---

* *Mount D'Urville is 3,060 feet high.*

"This navigation was very fatiguing for all the members of the expedition; and although this was the first attempt that had been made by the French, I have the firm conviction that no commander of an expedition could have pushed his researches farther than I have done, under the same circumstances."

35.—ISLANDS OF ALEXANDER IST. AND PETER IST.

ISLANDS OF ALEXANDER IST. and PETER IST.—the first in 68° 57′ S. and 73° W., the other in 68° 0′ S., and 91° W., were discovered by the Russian Captain Bellingshausen, in 1821. Two frigates, under this commander, it appears, were employed on a voyage of exploration, and penetrated to the 69th degree of South latitude, but were unable to proceed farther. The particulars of their voyage have been published in the Russian language, but no translation of it has been made.

SECTION V.

THE NORTHERN COAST OF BRASIL, FROM CAPE ST. ROQUE WESTWARD; INCLUDING ARACATI, CIARA OR SEARA, MARANHAM, AND PARA.

1.—GENERAL REMARKS ON THE NORTHERN COAST OF BRASIL, AND ON PROCEEDING THERETO.

THE COAST.—*Cape St. Roque* is a headland in lat. 5° 28′ 17″ S., and 35° 17′ W., 9 leagues to the S.S.E. of *Point Toiro*, or *Calcanhar*, the N.E. point of Brasil. The cape, *so called*, is merely a down of sand, like the coast which precedes it to the South, and follows it to the North. The sand is uniformly white, and over it are several clusters of bushes. It may be known by several small *red cliffs*; but these show only when the sun is in a favourable direction; there may, however, be seen, a little to the South, several large trees near the coast: and their wholly disappearing may form a guide for proceeding northward.

The cape is not a salient point, though frequently so marked in the charts; nor does the land to the northward of it exhibit any remarkable change in appearance.

Northward of Cape St. Roque the coast gradually falls, or declines in height, to the distance of 8 miles, where it forms the low point *Petetinga*; here the shore on the North forms a low bay. The point is not more remarkable than Cape St. Roque, and is to be ascertained, at a distance, by the difference of latitude only. The coast between the two is wholly of sand-downs, on which may be discovered bushes of a dark green colour; and there are, here and there, some large trees, in round masses, but not definable as marks on approaching the shore. The extremity of Point Petetinga is given by the Baron Roussin as in lat. 5° 21′ 35″ S., lon. 45° 19′ 23″.

Point Toiro, or *Calcanhar*, the summit of which is represented in lat. 5° 8′ 20″ S., lon. 35° 30′ 33″, is situate at the distance of 6 leagues N.N.W. ¼ W. [*N.W. by N.*] from Point Petetinga, and the coast continues of the same nature with that which has been described, being low and sandy.

From Cape St. Roque to Point Toiro the shore is bordered by the *Recife*, or that remarkable ridge of coral rock, which characterises the coast in general, as shown in the charts.* The more elevated part of this reef, within the present extent, is called *Pedras*

---

* This belt or chain of coral rock more particularly distinguishes the eastern coast, but it may also be traced on the northern, nearly all the way to Maranham; and M. Roussin says

de Garça, about 8 miles to the northward of Point Petetinga, and near which there is good anchorage.

BANKS of ST. ROQUE.—The Flats or Banks of St. Roque are on a great extent of shoal ground which encompasses all the N.E. coast of Brasil. They commence at Cape St. Roque in the South, and terminate beyond Point Tubaraõ or Tuberon in the N.W., in an extent of 34 leagues.

The northern edge of these banks lies in lat. 4° 51′ S. The longitude of the N.E. part (8 *fathoms*) is 35° 25′, and of the western (6 *fathoms*) 36° 36′.

There is a channel between the shore and the banks, which is known and used by the coasters. There are also passages between the dangerous spots on the banks, but they cannot be attempted by strangers. From the outer edge of the bank the coast, although low, may generally be seen, in clear weather, at from 10 to 12 miles off.

The more shallow parts of the bank are distinguished, generally, by breakers. Of these the easternmost is a little to the West, and about 12 miles from *Point Toiro*; but its breakers are rarely seen. The second lies to the West, near and under the meridian of 36°, off a point called *Tres Irmaos* or *Three Brothers*. This is named the *Lavandeira*, and occupies a great extent from East to West. The third and westernmost is a group of rocks called the *Urcas*, in lon. 36° 18′. The breakers on the Lavandeira and Urcas are very heavy at all times, but particularly when the wind blows from the offing toward shore. The Bank or *Paracel* of St. Roque, with 6 or 7 fathoms, terminates at about 6 leagues West from the Urcas.

On advancing to the edge of the Banks soundings of light sand will be found, with an admixture of broken coral, and a sudden discoloration of the water from its oceanic blue to a green colour. Hereabout the tide rises from 6 to 8 feet.

THE COAST resumed.—*Beyond Pont Toiro*, or the great elbow of land to the northward of Cape St. Roque, the coast, extending W.N.W., is generally low, and has few distinguishing objects. To the south-eastward of Seara [Ciara], or lon. about 38½°, there are, however, many inland and beautiful hills, and the coast is bordered with that remarkable ridge or reef of coral rock, which has been described. This reef, with frequent breaks, continues along shore 19 leagues to the north-westward of Seara; and within this extent the land is moderately high; but it declines thence westward, and presents a low shore, with sand-downs, some of which are very little above the surface of the sea. The latter will be given in detail hereafter. The soundings, as they generally are off such coasts, are mostly regular, and decrease gradually toward the shore, from a distance of 4 or 5 leagues.

There will be no difficulty in navigating the coast, if proper attention and caution be exercised. A strict masthead look-out should be kept; the lead should be constantly going; you should be distrustful of your distance from the land, both by day and night; and be acquainted with the tides.

The Winds and Seasons of Brasil have been described in pages 4 to 6. For the Tides, see pages 19 and 20. For the Currents, pages 29, 30, 31.

2.—PARTICULAR DESCRIPTION AND SAILING DIRECTIONS.

Under the meridian of 37° is the *Point do Mel*, a broad headland, bordered with the *Recife*, and dividing two spacious bays on the East and the West. The extreme points of these are, *Point Tubarao*, at 10 leagues to the E.S.E., and the *Morro Tibao*, or *Little Reteiro*, at 6 leagues to the W.N.W. The bank of soundings here extends to 4 or 5 leagues from shore, and near its edge, at 11 miles N.N.W. ½ W. from Point do Mel, lie the rocks called the *Angerstein Reef*, which will be presently described.

ARACATI.—The first port of the Northern Coast of Brasil is that of Aracati, on the *River Jaguaripe*, a place of rising consequence. The mouth of the river, as shown

---

that it seems as if its object were to defend the shore from the impetuosity of the waves, by which it is constantly assailed.

The reef, in several instances, is so exactly straight and even, as to seem the work of art, and rising like a wall from the bottom of the sea. In some places it is always covered; in others it is level with the sea at high water, and particular spots are from 6 to 10 feet above it. Its cuts or openings form the entrances to most of the creeks and harbours, as will be *shown hereafter.*

in the table of positions, is in lat. 4° 23½′ S., lon. 37° 49′ W. The river, from its bar to the town, was surveyed in 1829 by Mr. *Rd. Dixon*, commander of the *Westmoreland*, of Liverpool, who obligingly transmitted to us, in the next year, his original draft, on a scale of 4 inches to a mile, with a copy of the directions, which follow hereafter.[*]

Upon the South bank of the *Jaguaripe*, at the distance of about 11 miles from the entrance, is the town of ARACATI. At the entrance is a bar, narrow and dangerous, owing to sand banks on each side; and upon these the surf is very violent. The sand is so loose at the mouth of the river that, even with the coasting vessels of the country, every precaution is required. The river widens immediately within the bar,, and forms rather a spacious basin; but the port cannot, from the uncertainty of its depth, ever become important, and it has, at times, been nearly choked up.[†]

The Town of Aracati, a place of considerable trade, consists chiefly of one long street, extending East and West, with several minor streets branching from it to the southward. Thus far the river is influenced by the tide. At the ebb the stream is fordable; and, as it spreads considerably from the main channel, some parts remain quite dry at low water. The houses of Aracati, unlike those of any of the villages in the vicinity, have one story above the ground floor, and this because the floods are sometimes so great as to render it necessary occasionally to retreat to the upper part of the houses. The town has three churches, a town hall, a prison, and about 600 inhabitants.

The following are the Remarks and Directions written by Mr. Dixon.—"As vessels frequently engage at *Pernambuco*, on the eastern coast, to load a cargo, or part of a cargo, at Aracati, they consequently proceed, in the first instance, to the N.N.E., and then North, until they have passed Cape St. Roque, and the parallel of the extensive Flats, on the North coast, bearing the same name. The latitude of the *Urcas*, the most dangerous reef on these flats, is 4° 50′ S., in the longitude of 36° 18′. Having passed these shoals, by running westward, in lat. 4° 40′, or thereabout, on approaching near enough to the shore *Point do Mel* will be seen, composed of red cliffs and low white spots of sand on each side of them.[‡] This point must be avoided, for when it bore about S.S.E., at the distance of 7 miles, we were on a shallow bank of 17 feet, and farther to leeward the water appeared white, and, without doubt, was shallower. Running along the shore northwestward, and keeping in about 6 fathoms, Point *Reteiro Pequeño*, formerly called Cape *Corso*, will be seen, and also a mountain, appearing *blue*, in the interior; the former appears red, being a large bank of red sand, and the latter resembles Bardsey's Island, in St. George's Channel. When these two objects are in one, the *Reteiro Grande*, or *Algeberana Head*, will be distinctly seen. The land to the south-eastward of this head for 3 or 4 miles has a very singular appearance, forming like two steps, the lower part being reddish, and the other grey. The head itself is rugged, and has a pinnacle close to its base, which, when bearing W. by S., will appear open.[§]

At the distance of about a mile there are several rocks, of which the outermost is covered at high water: it is necessary, therefore, to give this head a good berth, until a large lump or hill, situated on the S.W. side of *Reteiro Bay*, is brought to bear S.W.: then steer toward the hill until Reteiro Head bears E.S.E. With these bearings there is safe anchorage in 3 fathoms of water; or, if the vessel's draught will admit, you may go farther in, and have smoother water, as the rocks off the head break off much of the sea.

---

[*] A reduction of the chart has since been published by the Admiralty, and is also given on our chart of the coast of Brasil. Another survey of this river by Captain Stephen Whettem, of the *Severn*, taken in 1844, has also been published by Mr. Laurie.

[†] Koster's Travels in Brasil, vol. i., p. 175.

[‡] The position of Point do Mel, as shown in the preceding table, is lat. 4° 55′, lon. 36° 59′.

[§] ANGERSTEIN REEF.—In the month of December, 1830, the brig *Angerstein*, John Bouch master, passed through a cluster of rocks, thirteen in number, and from 2 to 3 fathoms under water. The vessel ran close alongside of one, which was quite visible under the water, and the master, heaving the lead on it, had not more than 11 feet of water. They are not dangerous by day, but may be by night, with a sea on. Mr. Bouch describes the rocks as of a dark brown colour, showing themselves sufficiently for a vessel to pass clear of them; and, before a second cast can be got, you may be in 10 fathoms of water. "They lie in a triangular form, about 11 miles from the land, with Ponto do Mel S.S.E. ½ E., and the Red Mount on the Reteiro W.N.W. ½ W., about 8 leagues."

In the original notice of this danger the latitude was mis-stated as 4° 28′ S., but the longitude *correctly*, as 37° 6′. With the given bearings, and distance from land, the latitude must be 4° 44′ or 4° 45′. Like the *Urcas*, at 15 leagues to the eastward of them, they seem to lie on the edge of the Flats, where there is a depth of 6 fathoms, with corally ground.

Here vessels bound to Aracati generally lie at anchor, while the master proceeds thither overland to inform his consignee of his arrival, draught of water, &c. There is a house at the bottom of the bay for the accommodation of travellers, and farther up the valley are some others, where a horse and guide may be procured. The distance from this place to Aracati is about 21 English miles, and a great part of the way is along the sea shore. The course from this anchorage to the bar of the Jaguaripe is about N.W. ½ N.; the distance, 20 miles.

The land in the vicinity of the Bar is very barren; on the North side of the entrance is a high red bluff, and also two rocks close to the water's edge: one of these has the appearance of a large gun mounted, with a small fort and flagstaff, and some huts close to it. These objects, together with a spit of sand on the S.E. side, the breakers across the mouth of the river, and the smoothness of the water within them, are good marks by which the entrance may be readily known.

In proceeding toward the Bar a low spit of sand will be observed, which forms the S.E. side of the entrance of the river, and a ridge of heavy breakers, parallel to the shore for 2 or 3 miles, without any appearance of a passage. We approached them in our boat, and, perceiving a buoy, we soon got within the breakers, where we ascertained that this was not the channel used by the pilots, although there were 6 feet of water in it at low water. The *best channel* is farther to the N.W., for, besides having 3 feet at low water, it affords an easier passage out, as it lies in a N.E. and S.W. direction; whereas the former lies nearly E.N.E. and W.S.W., and is very narrow.

Both of these channels are liable to shift, and, therefore, every master ought to make himself acquainted with the state of the bar before he attempts to enter. Buoys or boats may be readily placed in the channel, or perches may be fixed on the spits, or on shore. He should also know the time of high water, and take the bar half an hour earlier.* After passing the boat or buoy that should be moored in the deepest water between the breakers, it will be necessary to haul up S.S.E. or South, to clear a bank on the West side, that nearly dries at low water. On this bank, as well as on that to the north-eastward of it, perches ought to be fixed. So soon as this bank is cleared, the depth will increase, and a westerly course must be taken, in order to pass between the high sandy beach on the starboard and a low bank that dries at two hours ebb, on the larboard hand. This channel, not a furlong in width, is by the pilots generally called the *Funnel;* and there are usually ten or twelve perches along the edge of the low bank. Having passed this narrow channel, it is proper to haul to the southward, to get under the sandy point on the South side of the river, into smooth water. In advancing toward *O'Neil's Bank*, which must be approached with caution, keep the lead going, and tack in good time, in order to get close to the weather shore. The channel between this bank and the shore is deep and narrow, but, after passing it, there is good anchorage in 3½ or 4 fathoms, where vessels generally anchor when waiting for a wind or tide to go out.

A vessel whose draught of water does not exceed 10 feet (and it would be imprudent to be much deeper for passing the bar) may sail up it at two hours' flood, to *Cook's anchorage*, where vessels generally load; and by waiting for more of flood she may go 2½ miles still farther up, and take in a cargo safely.

Sailing out of this port is more dangerous than coming in, as the wind is only favourable for passing the bar during three hours in the morning, and even then it cannot be depended upon. Should it fail, or head in the least, the vessel would be in imminent danger, as a heavy sea is always running on the bar; and the channel is so narrow that anchoring would be useless. When a vessel has been conducted through the *Funnel*, and as far down as the lowest perch, and being on the starboard tack, as much canvas should be set as she can carry, in order to give her good way over the shallowest part and through the breakers.

No vessel should attempt to go out if it has been blowing hard the day before, as a heavy sea will then be on the bar, and probably the breeze not regular.

According to the pilots and inhabitants of the place the channels often shift: the banks being composed of quicksands, the river, when swollen with rains, forces its way through them in various directions, and sometimes forms new channels, so that there is no certainty of their being long in one position. It is also affirmed that the channel is seldom deep enough till after the river has been raised by continued rain; and that in the dry season vessels may be detained for months for want of sufficient water.

---

* If a pilot be on board, care should be taken that, from his ignorance of the English language, he does not confuse the helmsman; a single mistake might prove fatal.

The Tide and Current have been already noticed.

COAST between POINT TOIRO and ARACATI.—As there appears to be no modern detail of the coast between Point Toiro and Aracati, we give the following from the old hydrographer, *Pimentel*, as it may still be acceptable.

The point *Tres Irmaōs* of the late charts is the *Ponta das Pedras* of the old. Off this point Pimentel says there are three shoals of rocks, having a channel between them and the main of 3 and 4 fathoms. At 3 leagues outward are reefs above water. (The *Lavandeira.*)

Of the *River Guamaré* [Aguamarea] to the S. W., the distinguishing marks are two inland sugar-loaf mountains, of unequal heights. To the West is the island [point] *Tubaraō;* then follow the rivers *Armayosa*, *Cavallos*, and *Conchas:* of these rivers the first two lead to the salinas or salt ponds of Assu, whence many parts of Brasil have been supplied. The coast hence trends N.W. to the PONTA DO MEL, or Honey Point, as shown on the chart: the point may be known by its high red cliffs.

At the RIVER UPANEMA [*Mossocro ?*], situate as shown on the chart, are natural salinas, which, like those of Assu, require no artificial means for crystallization. Here the land is very level; and on the West of the river there are, as far as a field piece can carry, red cliffs. Within land is *Monte Vermelhos* [*Mt. Tibao ?*], a sugar-loaf hill. Ships, however, should not advance into the bay, as it is full of shallows.

From the River Upanema to the N.W. the next river of any consequence is the IAGUARIPE, which may be known by a round bare hill of sand on the N.W., terminating in a rock below, and within land a mountain, having seven sugar-loaf points.

Five leagues inland from the Iaguaripe rises the range of the GUMAME MOUNTAINS, which extend 10 leagues in the direction of East and West.

Commencing at about 3 leagues from the River Iaguaripe the land, for nearly 4 leagues, close to the sea, appears dark and full, with several openings close to the bays. At about half a league from the commencement of these openings are some white cliffs, in shape like a schooner, with all sails set, and head at East. So soon as this full land terminates, the coast assumes a more flat and level appearance.

IAGUARIPE to SEARA.—*From the mouth of the Iaguaripe to Point Macoripe*, on the East of Ciara or Seara, the coast trends *N.W. true* (variation, 3° W.), and the distance is 20 leagues. The shore is uniformly sandy, but bordered by that remarkable reef which has been already noticed, having many breaks and an interval between it and the sandy shore; but inland are the several mountainous ranges, named *Monte Cascavela*, *Monte Canaveiros*, *Masaranguape*, *&c.* PIMENTEL describes a bay, IGUAPE, at about 5 leagues to the southward of Seara, which now appears to have a village on it, and which, he says, forms a small harbour to the westward of some low level land. The bay is surrounded by very high perpendicular cliffs, against which the sea breaks at half tide. It has a high, round rock, behind or within which is shelter and anchorage in 2½ or 3 fathoms. On the N.W. of this bluff rock you may anchor in the very roll of the sea, as it has 4 and 5 fathoms; and on the strand are pits for watering.

SEARA is the most important town upon this part of the coast. The bay on which it stands is formed by POINT MACORIPE (in lat. 3° 41′ 30″ S., lon. 38° 30′ W.) to the eastward, and by the River Papina to the westward, an extent of about 3 leagues. It is extremely open, its greatest depth being 3 miles.

Upon Point Macoripe stands a *lighthouse*, showing a *fixed* light, at 37 feet above the level of the sea, and visible 10 miles off. It was first shown on January 1st, 1847, and, according to the official notice, is in lat. 3° 41′ 10″, lon. 38° 35′ 9″, or 5′ further West than we have given it.

Abreast of the town, and at the distance of half a mile from the shore, extends a ridge of rocks, level with the water's edge, and within which small craft generally anchor, the entrance to the anchorage being around the eastern end of the reef.

The land within POINT MACORIPE is a high and irregular sand hill, terminating in a point, which has a battery and tower near the extremity. Ships advancing from the N.E. should not approach the point nearer than 2 miles, and should choose a berth without the points which form the bay. His Majesty's ship *Inconstant*, in 1814, was the first English ship of war that had anchored here during the memory of the oldest inhabitants; having brought up in a spot which had previously been occupied by the American frigate *Constitution*.

Mr. Henry Koster, in the Narrative of his Travels in Brasil, has given the following description of Seara, &c.

SEARA.—The *Villa da Fortaleza do Seara Grande*, or town of the fortress of Seara, is built upon heavy sand, in the form of a square, with four streets leading from it, and it has an additional long street on the North side of the square, which extends in a parallel direction, but is unconnected with it. The dwellings have a ground floor only, and the streets are not paved; but some of the houses have footpaths of brick in front. It contains three churches, the governor's palace, the town hall and prison, a customhouse, and the treasury.

The inhabitants are computed at about 1,200. The fort, from which the place derives its name, stands upon a sand hill close to the town, and consists of a sand or earth rampart toward the sea, and of stakes driven into the ground on the land side. It has about half a dozen ill-arranged guns. The powder magazine is situated upon another part of the sand hill, in full view of the harbour. There is not much to invite the preference given to this spot; it has no river, nor any harbour, and the beach is bad to land upon; the breakers are violent, and the *recife*, or reef, affords very little protection to vessels riding at anchor within it. The settlement was formerly situated 3 leagues more to the north-westward, upon a narrow creek (*Papina*), where there now exists only the ruins of an old fort. The beach is steep, which renders the surf dangerous for a boat to pass through in making for the shore, and landing is particularly inconvenient. The anchoring ground is bad and exposed; the winds are always from the southward and eastward; if they were very variable, a vessel could scarcely ride upon the coast.

Little of the city is visible from the sea, except the old fortress (La Fortaleza, before described), and the few huts which line its sides. On the left of the town there is a small river, whose banks are adorned with *coqueiros*.

The public buildings are not large, and are constructed in the usual Brasilian manner. The city does not contain a convent, nor any monastic edifice. This mark applies to the whole of Seara, but to no other province in Brasil. The only finished church in Seara is that of Nossa Senhora do Rozario, the especial protectress of the negroes. That of the Conception, frequented by the whites, was a few years ago pulled down, in order to be rebuilt on a larger scale; but the work stopped when the walls were about half erected, and still remains in that condition.

The bay of Seara opens to the North, forming a regular and spacious semicircular bight. The harbour is said to become annually shallower from the sand filling it up. Mr. Kidder says, in 1842, "At the time of our arrival, a few coasting smacks and an English brig were all the vessels in port. The landing is nowhere good, on account of the heavy surf that continually breaks upon the strand. Adapted to this, the pilot boat in which I went on shore was guarded by strong outriggers to prevent capsizing, but even then did not willingly come in contact with the shore." After conveying passengers from the shore to a fordable depth, they are landed in a *paviola*, a kind of chair elevated on poles, and carried by four men in the same manner as a *bier*.

The *recife* or reef forms a complete ridge, at a considerable distance from the shore, and is to be seen at low water. It extends parallel with the shore for about one-quarter of a mile, with two openings, one above and the other below the town. A small vessel may come to anchor between it and the shore; but a ship can bring up in only one of the openings of the ridge, or on the outside of it. A vessel coming in from the northward should make *Point Macoripe*, which is 2½ miles to the eastward of the town, with a small fort on it, and may thence bring up in 6 or 5 fathoms. On the appearance of a ship the town fort displays a white flag upon a tall flagstaff.

Northward of Seara, about a mile from shore, is a rock, called *Pedra da Velha*, or the *Old Woman's Rock*, which may be known by the breakers over it. Within this, at half the distance, is another, called *Lobvendo;* and next, that portion of the recife within which and the beach small vessels may anchor. Eastward of the latter are three other rocky patches, of which the last is three-quarters of a mile to the West of Point Macoripe; and between this and the point is anchorage, under the latter, in 5 fathoms.

The *Inner anchorage*, before mentioned, is between the recife or reef and the shore. You enter by the eastern channel and go out by the western, when you cannot fetch out by the eastern one. Here a vessel lies at low water, surrounded by breakers, except in the channels; and, as the pilots are very inattentive, it is altogether very dangerous. This is, nevertheless, becoming a place of very considerable trade.

The Baron Roussin, in his "*Pilote du Brésil*," makes the following remarks on Seara. Ciara* is the capital of the province of the same name. Its anchorage cannot be considered as a harbour, being exposed to all winds between N.W. and East, which are frequent hereabout; but the ground is excellent for holding, from 3 miles off the land to the reef, which includes the inner roadstead.

In the outer roadstead, at from 1 to 3 miles from land, are from 6 to 10 fathoms of water; bottom of soft sandstone covered with sandy oaze, and in which the anchor holds well. The coasters enter the inner road by two passes formed in the reef, at 200 fathoms asunder; the depth in these passes is about 13 feet at high water. The export trade of this place is chiefly in cotton, hides, and the dried meat whereof there is so great a consumption in the southern provinces.

DIRECTIONS FOR SEARA, BY CAPTAIN THE HON. W. WELLESLEY, COMMANDING H.M.S. SAPPHIRE.†

SEARA cannot, with propriety, be called a port, nor in any but a tropical climate would it be thought a secure roadstead. I believe it to be perfectly safe, particularly from December to May, and we have the precedent of several large ships, namely, the American frigate *Constitution*, during the war; and, soon after, the *Inconstant* and *Isis*, English frigates, having laid there with impunity.

When bound for Seara run down in the latitude of Point Macoripe (3° 41′ S.), to which give a good berth, until the castle bears S.W., then run down direct for it until Point Macoripe bears E.S.E.; do not go any farther in until a pilot comes off, which will be in a catamaran. There are four high mountains at about 5 leagues to the S.W. of the town, which may be seen from a distance of 9 leagues in the offing, and by which the port of Seara is easily recognised.

Point Macoripe being a sandy bluff, abruptly terminating, if you know your longitude nearly, it cannot well be mistaken, and the land on this part of the coast is moderately high. Running in toward it you will discover the reef breaking off; and inside of it a good berth will open the town and show the steeple, &c.

From 11 and 10 fathoms (standing in for the town) you will shoalen your water to 7 and 6, when you may either anchor or heave-to, and wait for the pilot, should he be coming off. If there are any merchant vessels lading they will be well to the westward, protected, in a small degree, by the reef.

The landing is very difficult and uncertain. It can be effected only from half tide to half tide, and then by the help of the townspeople, who, with their negroes, are in attendance, to carry you out of the boat in a chair. This is owing to the reef that lies in a direction parallel with the beach, and about 300 yards from it: these begin to appear at half ebb, and then make a kind of breakwater until half flood, when the water, dashing over them, creates a surf, in which it is impossible for a boat to live.

The pilotage charged for the *Sapphire*, at Seara, was eight Spanish dollars.

REMARKS ON THE PORT OF SEARA, BY CAPTAIN GEORGE CHEVELEY, OF LIVERPOOL.

"On going into Seara I would not advise vessels to run too far into the Bay, but to keep within a mile inside of the weather point (Macoripe), and, if possible, to avoid coming to anchor; for, as in most of the open roadsteads in Brasil, you will likely have to leave your anchor behind. Stand off and on, upon the West side of the Bay, and a pilot, on a *Jean guendo*, will soon come off, and run you into the harbour (if it may be so called), which is sheltered from the sea only by the reef of rocks, which are barely seen at low water. When at anchor within this reef be careful to ride with a good scope of cable; for hard squalls are frequent, and I have driven with a clear anchor and 40 fathoms of chain. It is also advisable to keep a good night watch, and a second anchor in readiness to let go at any moment.

---

* In giving *Seara* for *Ciara*, we follow the pronunciation and general custom; but *Ciara* is the proper name.

† Originally given in the *Nautical Magazine*, 1833, and therefore before the erection of the lighthouse on Point Macoripe.

"While lying here it appeared, from my observations, that the latitude of the anchorage was 3° 43′ S. Point Macoripe (now distinguished by the lighthouse), 3° 40′."

Many of the natives are grossly dishonest, while lost in ignorance and superstition. Even the upper grades may pride themselves on these *enviable* qualities. While Captain Cheveley's vessel was driving and nearly on the reefs, with the ensign union down, they kept up a constant fire upon her from the fort, declaring that she was running away, in order to avoid the port charges, although not one-half of the cargo was on board; and, upon remonstrance, both captain and consignee were threatened with imprisonment.

ON THE ANCHORAGE OF SEARA, BY LIEUTENANT D'ELISSALDE, OF THE FRENCH MARINE, COMMANDING THE GUN BRIG LA VIGIE.

The road of Seara is formed of reefs, which render its approach dangerous. On the easternmost part, or Point Macoripe, a LIGHTHOUSE has been built, elevated 40 feet. This light is fixed, and is visible about 12 miles off. It has been shown since January 1, 1847. The westernmost point terminates in a sandy beach. When you pass near the shore you should guard against some small rocks, which have not been shown on the charts.

To reach the anchorage, get as much to windward as will allow you to bring the East point of the *Serra Guguba* to bear South; it is then in a line with the *Miretes Reef*. The light of Macoripe will then bear S.E. ½ E., about 1½ miles distant, and the summit of Jua to S.W. You will then be at the entrance of the channel, and thence steer on towards the Serra de Jua until the eastern angle of the fort bears South. Steer then for the fort, and you will reach an anchorage.

At the anchorage of La Vigie we found the depth to be 19 feet at low water, to 28 or 30 feet at high water, which gives a mean depth of 25 feet nearly. You must moor and run out 20 fathoms of chain to each anchor, and the holding ground is so good that a vessel never drives.

The road is open from W.N.W. to E. by the North, so that it is exposed to all the winds that are to be feared, the land or southern breezes being always very weak; the reefs break off the swell, but you always roll a little, the swell coming constantly from the N.E. Landing is very difficult, for the sea breaks with great violence on the sandy shore, and it becomes impossible at high water, under pain of losing your boats. It is advisable at low water to fix a grapnel offshore, so that you may always keep your boats to the swell by means of it.

Watering is difficult, the boats keeping some distance off; the getting large casks on board at low water is most troublesome, and is impossible at other times. You are also very fortunate if you get the water; we were enabled to do so by the kindness of the American consul, who readily placed his well at our disposal. The inhabitants procure water by digging a few feet in the sand, but the quantity gained thus is very insufficient. Every ship therefore freighted with cattle should be prepared accordingly, as I believe it is impossible to procure the necessary quantity for this service at Seara. According to our pilot, there is a watering place at the anchorage of Macoripe, where watering is an easy task.

The fort at Seara has never been finished. There is only the curtain and the two bastions toward the road, and its armament of eighteen pieces of cannon is much more formidable to their own artillerymen than to those against whom they may be directed. The town is completely open and unprotected.

The breeze is commonly weak and irregular at Seara; it freshens nevertheless in the afternoon, and deadens in the evening.*

COAST WESTWARD of SEARA.—From off Seara H.M.S. *Sapphire* proceeded on a N.W. ½ W. and N.W. course, along the land, at not more than 4 miles' distance, in from 13 to 11 fathoms, until she arrived at the village of *Curú*, a distance of about 10 leagues. When abreast of it, says the Captain, the decrease of soundings to 9 and 7 fathoms warned me off. There is a heavy breaking shoal extending from the point on which this village stands; and in case any one not knowing his longitude should make it, it may not be amiss to state that we saw catamarans, with their sails hoisted to dry on the beach, which had exactly the appearance of large boats sailing upon a river, until the regularity of their distance, and a nearer approach, dispelled the illusion.

---

* Annales Hydrographiques, 1849, p. 384.

Hauling out from Curú the water did not deepen for a considerable time. By the *Sapphire's* observations Curú appeared to be in lat. 3° 28′ S., lon. 39° 0′ W. In the Baron Roussin's chart a village, probably intended for the same, is represented in 3° 30′ S., and 38° 52′ W.

RESUMING the COAST AT SEARA we now proceed to observe that from *Point Macoripe* the coast trends *N. 56° W., true*, to the meridian of *Mount Melançia*, a distance of nearly 19 leagues. This mount, so called, is an insulated sand hill near the coast. In the intermediate distance you pass, successively, before the mouths of the *Papina* or *Rio de Ciara Velha*, *Rio Cioppé*, and *Rio Curú*, with the *Morro* or *Hill of Curú*, and the *Serra de Mandahú*, in the interior of the country, called also the *Serra Grande.*

All this coast is sterile and desert in the part next the sea, and shows no trace of culture nor inhabitants, it being one undiversified series of low downs and loose sand. The coast is clean: and, at 2 or 3 miles from it, are found from 6 to 13 fathoms of water, with fine grey sand.

From *Mount Melançia* the coast takes a more westerly direction, and trends *N. 64° W., true*, 11 leagues, to a village named *Almufedas;* then *N. 69° W.*, 5 leagues, to *Point Tapaji.*

The village of *Almufedas*, standing within the sand-down on the shore, is situated on the border of a small river, *Aracati Miram*, navigable by coasters. From the offing its steeple may be seen among a group of cocoa trees. It stands in 2° 56′ S., and 39° 58′ W.

This village serves to indicate the commencement of a bank which extends thence nearly to the little hamlet of Jericoácoará, situate about 40 miles more to the westward.

REMARKS ON COMING IN FROM SEA, TOWARD THE COAST WESTWARD OF SEARA.

VESSELS COMING IN FROM SEA, when bound to the westward, or to the port of MARANHAM, may happen to fall in with the land as far to the eastward as *Seara;* in this case, as shown by Captain Wellesley, it will be found higher than any to the westward; and magnificent mountains, some leagues inland (the only fine feature on the northern coast of Brasil), will be seen. *Point Macoripe*, on the East of Seara, says the same gentleman, may be known by its being a sandy bluff, terminating rather suddenly. But upon whatever part you advance, it will be needless to approach nearer than 6 or 7 miles, until, in fact, the land is just clearly discerned off the deck; that is, *if your object be to make a passage.*

If you come upon the land toward the evening, and have run sufficiently near to make it out, as before said, a N.W. by W. ½ W. course will not be more than a safe course to haul off and on for the night, or you may stand off to 22 fathoms, in the parallel of about 2° South, and inward to 7 fathoms. It is seldom, under any circumstances, that vessels find themselves farther off the land than they expected in the morning.

H.M.S. *Sapphire* was in less than 10 fathoms of water the whole of the first night she was on the coast; but Captain Wellesley has said that he would not willingly go so near again; being sensible, not so much of the danger, as the inutility of such a close approach.

DESCRIPTION OF THE COAST CONTINUED.

Between *Point Tapaji* and the Point of *Jericoácoará*, before noticed, the coast trends nearly East and West, in a distance of 9 leagues; from *Jericoácoará* to the mouth of the *Rio Camucin* or *Camosin* it forms a slender bay, in extent 6 leagues; from the Camucin to another river, the *Tamonha* or *Tamonia*, it again trends nearly West, 5½ leagues; and from the latter to the *Iguarassu* 6½ leagues.

Off *Mount Melançia* (lon. 39° 18′), before noticed, a bank commences, which thence extends all the way to the *River Iguarassu*, an extent of 45 leagues. This bank, which is called in the country *Pracel de Caracu*, from the name of the most considerable hamlet on this part of the coast, extends outward about 3½ leagues from the shore, and is circumscribed by the depth of 6 fathoms. Upon the bank, off the village of *Almufedas*, there are 4½ fathoms at 5 miles from shore; and at 3 leagues North from *Point Tapaji* are 6 fathoms: and there are similar depths thence westward all the way to the Iguarassu. From the edge of the bank, in 7 fathoms, the water gradually shoalens to half a fathom near shore: but, owing to this gradual decrease in depth, there are no breakers. Those approaching may, therefore, advance safely, by keeping the hand lead going.[*]

Large vessels coming in from sea, and proceeding westward, should keep off, at 4 leagues from the land; the coast being so low that, at a safe distance, the tops of cocoa trees only can be occasionally seen, and in the finest weather.

When you have advanced to about 8 miles from the coast, on the meridian of Caracu [40° 11′ W.], and continue on a westerly route, upon approaching a little nearer to the land you will discern some huts, which form the hamlet of *Castelhamos*; but this is not requisite for a vessel of any size; and those drawing 15 feet of water should not come nearer to the shore than 10 miles, where they will find 6 or 7 fathoms and less water, as well as to the westward of the meridian of *Jericoácoará*.

When you may be westward of Jericoácoará the draught of the vessels and soundings will determine the distance to which it may be proper to approach the bight. The bottom here has been represented as sufficiently clear to allow a vessel to come in without danger, and as having 4 fathoms of water at half a mile from the cove.

JERICOACOARA.—This bight or cove is formed by the broken ridge or ledge of rocks, with which the coast is bordered, into a small basin between them and the shore. The waves commonly beat high on the reef, and break over it into the tranquil basin. On the shore may be occasionally seen the temporary huts of the *Sertanejos*, or the inhabitants of the *Sertao* or interior country. These huts are formed of perches fixed in the earth at one of their extremities, united at the other, and covered with cowskins as a protection from the wind; they appear to remain only while the coasters come to take off the hides, &c., which are sold here, and which are produced, in great quantities, by the cattle in the neighbourhood.

Admiral Roussin says that, in passing several days before Jericoácoará, several vessels were engaged in procuring poultry and cattle, of which there was a great number at a low price. These resources, in certain cases, navigators may be happy to find. No vegetable, however, fit for the nourishment of man, is to be obtained; and fish, though taken on the rocks or in the basin, upon the retiring of the sea, are not abundant.

By digging pits on the beach hereabout potable water may be obtained. Spring tides in the basin were found to rise from 10 to 12 feet.

According to M. Roussin the down which forms the eastern shore of Jericoácoará stands in lat. 2° 47′ 28″, lon. 40° 27′ 16″.—Variation of the needle, at 2 leagues to the northward, in January, 1820, 2° 23′ W.

The coast which follows Jericoácoará, to the westward, is a low shore of white sand, having, in the interior, clumps of small bushes, and without it the ridge or border of rock. Hence follow, in succession, as shown in the chart, the mouths of the little rivers *Camucin* or *Camosin*, *Tapuya*, *Tamonha*, &c., which may be seen on advancing very near to the shore. The first of these is the only one navigable for coasters of any draught; the others will admit boats only.

At from 1 to 4 miles of distance from this coast are found from 4 to 8 fathoms of water, bottom of oaze, sand, and madrepores, or coralline substances.

The PERNAIBAO, or PARANAHYBA,[†] &c.—The portion of coast between the *Barra de Iguarassu*, the easternmost branch of the *Rio Pernaibaõ*, and the *Barra de*

---

[*] The coasters, having nothing to fear, sometimes enter, according to their draught of water, the mouths of the little rivers *Tapaji* and *Caracu.—M. Roussin.*

[†] "The RIO DE PERNAIBAO, or PARANAHYBA, is one of the largest rivers in Brasil; and, in a commercial point of view, is of the highest importance. It is formed by three streams of the same name, that take their rise in the borders of the Sierra, which bounds the province of Piauhy on the S.W. [Lat. 10° 45′ S.] The first tributary is the *Rio Bolsas*, the only one, in fact, that joins it on the left bank. Near this confluence the *Rio Urussuhy* enters it on the

Tutoya, its westernmost, has generally been exhibited very incorrectly in the charts. The distance between the mouths is between 9 and 10 leagues, within which extent the Rio Pernaibaõ, or Paranahyba, discharges itself by four others, namely, the *Barra Velha*, and the *Barras do Meio*, *do Caju*, and *das Canarias*. All these openings are formed by a group of low isles, composing the *delta* of the Pernaibaõ, and the five of which, next to the sea, afford excellent pasturage for cattle.

The HARBOUR OF TUTOYA, on the West, has lately been described as the only harbour along the extensive line of coast between Bahia, in lat. 13° South, and the Marañon, under the Equator, that admits of the bar being crossed at all times of the moon by vessels drawing from 14 to 15 feet of water.

The BAR of IGUARASSU, and the BARRA VELHA, the two easternmost passages, have become unnavigable for ships; and, in consequence of the formation of sand banks to leeward, vessels now proceed to enter by the *Barra de Tutoya*, for which branch of the river a pilot may be obtained.

The *Bar of Tutoya* is described as of great breadth, some say 6 miles. The masters of two English vessels, who have sounded on it, never found less than 5 and 6 fathoms of water; but, as it has not yet been correctly surveyed, caution is required.

The charts have exhibited a rock, called *Pedra do Sul*, between the Barra Velha and Barra do Meio; but M. Roussin says that this is not a danger really to be feared, being only a break of the reef on the coast, and does not extend more than a mile along shore. On approaching the coast hereabout, in fine weather, you may see, at the distance of 10 or 12 leagues to the south-eastward, the high lands of the interior, named the *Serras dos Cocos*, *Serras de Hybiappaba*, which are the last mountains that come in sight between this and Maranham to those proceeding westward.

It is advisable not to approach the coast of the embouchures or mouths of the Pernaibaõ nearer than to 4 or 5 miles, and not farther in than to a depth of 8 fathoms. The sea is very muddy, and the bottom of oazy sand, before these passages; the ground is, therefore, bad for anchoring. Eight or 10 fathoms may be found at 4 or 5 miles from land.

TO THE WEST of the PORT of TUTOYA the coast gradually abates in height. The shore is composed of flats of sand, with woods in the interior only. The coast exhibits sand hills, of a shining white colour, without any verdure; and having the appearance of linen cloths, or extended sheets, they have received the name of *Lançoes Pequenos* [*Little Sheets*], in contra-distinction to a more extensive range to the westward, named *Lançoes Grandes* [The *Great Sheets*].

The *Lançoes Pequenos* occupy an extent of coast terminated on the West by the *River Perguiças*, near which are some breakers of the same name.

The RIVER PERGUIÇAS separates the Lançoes Grandes from the Lançoes Pequenos. A long spit extending from this river is formed, as are all the banks, and even the islands

---

right bank, and comes down from the same Sierra. At 28 leagues lower down the *Gorguea*, having taken its rise in the Sierra of the same name, and formed in the early part of its course the *Lake Pernagoa*, is incorporated with it. At 36 leagues farther it receives the *Caninde*, which flows from the Sierra dos Irmaos to N.E., and at 6 more the *Poty* falls into it. After 44 leagues of its course the *Rio Longa* joins it; at a little below which a small arm issues from the Pernaibao to the East, and forms a large lake called *Encantada*, the island between it and the river being about 5 miles in length. At 7 leagues farther down, this river divides itself into two rather unequal streams, and ultimately enters the ocean by six branches, separated by the five islands above mentioned.

"The distance of the *Villa de Pernaibao* from the Barra de Iguarassu is about 8 [*not* 80] miles." See *Nautical Magazine*, Vol. I., pp. 310, 312.

The PROVINCE of PIAUHY, on the western side of which this river runs, is divided into five comarcas, three of which are said to be kept in an orderly state of administration. The others are usually in the most unsafe condition. This province has but 20 leagues of sea coast; but it extends to the South and inland about 400 miles. It is generally level, and in some parts undulated. It has extensive unwooded plains, with large herds of cattle. Silver, lead, and iron mines, are said to abound, The soil in many parts is well adapted for the cultivation of mandioca, rice, maize, cotton, and sugar-canes. Its principal river is the Pernaibao. Its capital is Oeyras, 260 miles inland, with about 5,000 inhabitants. There is no seaport for foreign trade, but it carries on some coasting traffic.

on this coast, by the tide of the river meeting the current of the sea. H.M.S. *Sapphire* crossed this bank by night in 5 fathoms, and the *Mersey* in 3½, but in 7 fathoms a ship will be quite close enough.

If the coast be made from the northward, about the Perguiças and Lançoes Pequenos, soundings will be struck in 19 or 20 fathoms, and soon after in 13; and from thence regular bottom will be found in 10 or 11 fathoms, until the vessel is close enough to haul off and steer along the land.[*] The land hereabout is green, interspersed with sand hills. It is low and irregular; but in one place there is an extent of a mile or two of white sand, crowned with green of a regular height.

In keeping at 8 or 10 miles from this part of the coast you will be at a sufficient distance to avoid all danger; and thus you will have from 7 to 14 fathoms of water.

The river Perguiças is sufficiently deep for a large and well constructed brig to some distance from its entrance; but the interior navigation is reported to be difficult.

LANCOES GRANDES.—The coast to the West of the mouth of the Perguiças trends *N.* 65° *W.* to *N.* 80° *W.*, on an extent of about 17 leagues. It resembles that which precedes it to the East. Its downs are of shifting sand, of a moderate height, and their extent very near 12 leagues. Nothing can more resemble white sheets extended on land; and this aspect is very remarkable and useful, as a landfall, to those coming in from sea when bound to Maranham, &c.

According to M. Roussin the eastern extremity of the Lançoes Grandes is situate in lat. 2° 34′ 12″ S., and 42° 44′ 52″ W.: the western extremity in 2° 21′ 0″ S., and 43° 12′ W.

Emily Shoal.—This shoal, which was discovered by the grounding of a French vessel, lies in about lat. 2° 18′ S., lon. 43° 7′ W., *nearly* where 4½ fathoms are marked in the chart. The following is the notice of the shoal:[†]

"When passing the Lançoes Grandes, and N. by E. of the most remarkable sand hill, 7 or 8 miles from land, in 7 to 9 fathoms, at 12^{h} 30′ p.m., the *Emily* got into shoal water upon a bank of 2½ fathoms, which appeared to be of small extent, around which I found 7 fathoms. The vessel was going 2 knots at the time, and at noon was in 2° 20′ 2″ South latitude.

"The bank is situated within a very little of the track of the sloop *La Bayadère*, and where 5, between 7 and 9 fathoms are found. It is probable that this sounding was obtained on the edge of the shoal water, for I think that a vessel running 4 knots would cross sufficiently rapid, so as to get only one shoal sounding.

"This bank is very dangerous, because it is situated in the route that a large vessel would take, and at a distance from the land that would remove all apprehension of danger. It was at low water when I touched, or thereabouts, and from aloft only one green patch of trifling extent was to be seen, resembling others on these shores."

MANGROVE COAST, &c.—Immediately to the West of the Lançoes Grandes the coast entirely changes its aspect. Instead of being arid, and devoid of verdure, it now appears as if wholly covered with bushes and groves, so closely set that, at the distance of 4 miles, the ground between them is not to be seen. The shore is low, and is called the *Praya das Mangues Verdes*, or *Beach of Mangroves*. The sudden transition of colour here, from that of the Lançoes, renders it impossible to mistake this portion of coast.[‡]

The portion of coast, several miles to the westward of the meridian of 43° 24′, turns abruptly to the West, and southward of West. Here you have in sight the Island of St. Anne, which forms, with the continent and the Isle of Maranhaõ, or Maranham, the great inlet called the *Bahia de St. José*.

ISLE OF SANTA ANNA.—This isle, a little more elevated than the lands which precede it to the East, is equally covered with mangroves and other trees; and, with the exception of its lighthouse, offers nothing remarkable when it first comes in sight. On advancing, however, you will see the breakers which lie about and to the eastward of it, of which the easternmost are 8 miles from the N.E. point of the island. Near these shoals are from 7 to 24 fathoms of water, bottom of sand.

---

[*] On March 1, 1849, Lieutenant D'Elissalde, in the French schooner *La Vigie*, in beating up from Cayenne to Ciara, in 30 to 35 fathoms, suddenly fell on a bank of 11 to 13 fathoms, about 1 mile or 1½ miles in length. The depth appeared to be even on it, and no ripple or change of colour would indicate its existence.

It is about 35 miles from the coast of Brasil, N.N.E. of Paranahyba, and its South part is in lat. 2° 17′ 25″ S., lon. 41° 52′ 17″ W. *Ann. Hyd.*, 1849, p. 187.

[†] Extract of a Letter of M. Charles Leraistre, Commander of the ship *Emily*, of Nantes.

[‡] At 3 miles to the North of Mangrove Point M. Roussin found the magnetic needle in the *month of January, 1820, to be at Zero*. **Hence we conclude that there is no variation here.**

To the West of St. Anna's Island will be seen the breakers of the CORONA GRANDE, a vast flat of rocks and sand, nearly even with the water, and extending about 5 leagues to the northward from Maranham Island.

LIGHTHOUSE ON ST. ANNA'S ISLAND.—This lighthouse, which was first lighted on the 1st of June, 1831, has been described in the notification as a square tower, having three distinct stories, each story diminishing as it rises. The angles bear North and South, and East and West. Its full height is about 90 feet above high water, spring tides.

In the daytime the tower has the appearance of a vessel under sail. At a considerable distance by night it shows a *revolving light*, visible every thirty seconds, for about ten seconds together. At a shorter distance the lights show as a permanent light, like a bright star, with a brighter light every thirty seconds.[*]

The Inlet of Bahia de St. Jozé, between the continent and Maranham Island, is too shoal and dangerous for a passage to the port of Maranham, even for small vessels. The general entrance is, therefore, by the Bay of St. Marcos, to the West of the Corona Grande, as will be shown hereafter.

The tide, as before noticed, sets with great strength into the *Bahia de St. José*. On the first time the *Sapphire* ran along the coast she was set inside the reefs, obliged to anchor in 5 fathoms, and was thence compelled to steer out on a N.E. course, in order to get clear of them. The breakers, however, as we have noticed, always show themselves, and should be rounded in not less than 14 fathoms.

The same ship found anchorage in 7 fathoms, with the lighthouse on St. Anna's Island bearing W.S.W. ½ W., and Mangrove Point S.E. ½ E. Within the reefs the ground is bad.

CAPTAIN HEWETT'S DESCRIPTION OF, AND DIRECTIONS FOR, THE NAVIGATION FROM SEARA TO MARANHAM.

"From Seara the coast trends N.W. by W., 35 leagues, to *Point Tapaji*, and thence West, 10 leagues to *Jericoácoará*, the depth gradually increasing offshore; but a N.W. course should be pursued, in order to avoid the shoal parts of the *Bank of Caracu*. Having run 100 miles upon the N.W. course, allowing 1½ miles per hour for the current's assistance, in soundings varying from 11 to 20 fathoms, change the course to W. ½ N., which is nearly the direction of the coast from Jericoácoará to Mangues Point; and it will give you a sight of the land as far as the Island of St. Anna.

"When ships are bound to MARANHAM, from seaward, it is absolutely necessary to make the land considerably to the eastward, as the currents, in general, set very strongly between W. ½ S., and W.N.W. If, in endeavouring to make the land, you should be in latitude about 3° South, on discovering it, you will be off Mount Melançia, or between it and Seara; if the latter, three other mountains will be observed to the S.S.E., lying nearly S.E. and N. W. of each other, which mountains are about 7 leagues to the westward of Seara, and are easily seen from that place. About this part of the coast you will have a bottom of fine sand and shells.

"If you should make land when you consider yourself in from lat. 2° 15′ S. to 2° 30′ S., and have a bottom of small red and white stones, you will be off Jericoácoará; if the bottom consists of yellow, blue, and red stones, you will be off the *Paranahiba*, or *Tamonia;* and three mountains, lying nearly in the meridian of each other, in the neighbourhood of the latter, will be seen.

"The WHOLE COAST from POINT MACORIPE to PARANAHIBA is sandy to about half a league inland, whence it appears well cultivated; so that it is easily distinguishable from the coast between Paranahiba and Green Mangues (Mangroves) Point, which consists of nothing but sand, without the least sign of vegetation.

---

[*] This lighthouse was destroyed by the rebels on the 23rd of June, 1839, in the hope that vessels conveying aid or relief to Maranham might be wrecked. It has since been reinstated; but according to a recent notice in the *Nautical Magazine* (*Feb.*, 1844), there is *no dependence to be placed on the light*, it being worse than useless, from inattention.

"Inclining to the shore, and observing the *Lançoes* or sand banks well, as you pass along, the entrance of the RIVER PERGUIÇAS will easily be distinguished. The sand will now begin to assume a higher and more irregular appearance; this height and irregularity does not, however, deserve the appellation of hills. When the PERGUIÇAS bears S.S.E. you will begin to shoalen your water to 8 or 9 fathoms, but a steady course should be pursued, as you will presently pass a spit formed by the sand washed from the river, and which, meeting the natural course of the current in the offing, inclines it to the N.W.

"If the day should be far advanced, when you are off this part of the coast, haul to the wind under topsails and foresail for the night, standing off into 22 or 24 fathoms, and on into 12 or 14 fathoms. It would not be advisable to haul the wind before you are past the Perguiças, as otherwise you may be short of daylight for the operations of the ensuing day. At daylight you may bear up under all sail, pursuing the former course and distance from the shore, and toward the conclusion of the sand banks (*Lançoes*) the land will begin to appear a little more fertile, and Green Mangues Point will easily be distinguished."

On the Shoals eastward of St. Anna Island the following remarks were made by *Captain Livingston*, on his voyage of 1824.

"A dangerous shoal exists at about 10 or 11 miles to the eastward of St. Anna's Island. Many vessels have narrowly escaped it. We got into 3 fathoms, with St. Anna bearing W. by N. The bottom was of fine sand, in ridges, with even 10 fathoms between; but I have no doubt that there are also coral rocks, from the manner in which the sea broke, at a little to the westward of us. About the same time, a French brig in company, the *Cæsar*, of Marseilles, struck, and unshipped her rudder at about 1¼ miles to the N.E. of us, though her master assured me they had never found less than 6 fathoms. We had one cast of only 2 fathoms, but did not touch; so the lead must either have hit the top of a coral rock, or else a knob of sand.

"*The Island of Santa Anna* shows quite level in the direction we made it, and I think cannot be less than 12 miles long, in place of 2 or 3 as commonly laid down. I have spoken with many who concur with me in this opinion, and one who has been on it states it as 12 miles long, and 3½ or 4 miles broad.

"From the appearance of the land,* and the depths of water, both the French captain and myself thought we were on the *Coroã Grande*, or *Grand Crown*, to the westward; and as night was rapidly coming on we both anchored; we, in 9 fathoms, and he, at half a mile West of us, in 25 fathoms.

"The CÆSAR'S SHOAL (so called by me from the French brig above mentioned) lies about 2 miles South, and as much East of the place we anchored at the evening after we were in such shallow water on it. The shoal I consider very dangerous, and think it extends 3½ miles East and West, and 3 miles North and South; but there is at least one other at a short distance South of it.

"I have conversed with several intelligent masters, who have been in the Maranham trade. Many have see it. All of them seem to think that the safest mode for those bound to Maranham is to get into about 2° South or a little to the southward of 2°, and run, with great caution, until *Mount Itacolumi* (on which now stands a lighthouse) on the western side of Maranham Bay, and which cannot be mistaken, is seen; and I incline to their opinion: as thus, though it may occasion a little more watchfulness, repays it in safety; keeping vessels clear of the *Cæsar Shoal* and the Coroã Grande, as well as making them sure of not getting into the Bay of St. Jozé.

"It is to be observed that the Cæsar's Shoal lies in the very track formerly pointed out in the Sailing Directions for making Sta. Anna; and if the frigate *Inconstant* had run on her course a few miles farther, as shown on the chart by Captain Hewett, without hauling up, she must have discovered it."

Captain Hewett's Directions go on as follow:—"When you lose sight of the Island of Sta. Anna, bearing about S.S.E., you will be abreast of the Great Crown Bank [*Coroã Grande*], and should keep a good lookout to the southward from the mast-head; and if breakers should be discovered, or if you shoalen your water to less than 18 fathoms, haul out half a point, but no more. Your distance to be run on a N.W. by W. course will be about 13 miles, and on the westerly course, 11 miles, including 1 mile per hour upon each for the assistance of the current, before you alter the course to W.S.W.; which, having done, without fear, look out for MOUNT ITACOLUMI ahead, and the TAPITAPERA coast on the larboard bow." This mountain, with its lighthouse and coast, are described hereafter.

---

* *It is to be recollected that, at this time, the lighthouse was not erected.*—ED.

M. Roussin says that the breakers of the Coroã Grande, with those of the isle of Sta. Anna, may sometimes in clear weather be seen from the mast-head at 3 leagues off, and from the deck of a corvette, or sloop, at half this distance. They are divided into several groups, and always show, although the tide rises 12 feet. The only difference in their appearance is produced by the state of the tide, or the greater or less elevation of the waves. The northernmost point of the breakers of the Coroã Grande is given by the Baron as in lat. 2° 10′ 50″ S., lon. 43° 57′ 32″ W. Captain Hewett previously gave it as very nearly the same.

On approaching the Coroã Grande from the North, when the sky is not clear, you may distinguish the coast of Maranham Island from that of Sta. Anna by its being higher, its masses woody, the configuration varied, and a bald white shore on the North.

MARANHAM. — DESCRIPTION, &c. — The BAY of SAN MARCOS [St. Mark], or Maranham Bay, is comprehended between the Island Maranhaõ* and the continental coast on the West. It principal entrance lies N.N.E. and S.S.W. The bay is navigable, in the greatest part of its extent, for large vessels, and frigates may anchor before the HARBOUR of ST. LUIS, the principal port of the bay, situate on the western coast of Maranham Island.

The entrance of the bay, being limited on each side by the dangerous shoals shown on the chart, must be approached with caution.

In this entrance, between the Corona Grande on the East, and the continent on the West, is a shoal 3¼ miles long, N.N.E. and S.S.W. It is called the MIDDLE BANK, and was originally surveyed by Captain Hewett, as shown in his particular plan of the bay. The depths over it varied from 6 to 2½ fathoms, and it seems probable that there may now be less water upon it. Its western side is steep, and should be approached with caution. On the eastern side the soundings are more gradual, but the channel on this side is narrower than formerly. The Middle Bank latterly has been described as connected with the Corona Grande, being divided only by a swash between, of 7 to 9 fathoms. It is not, as may have been supposed, the one by which vessels generally enter, the western being the superior and ordinary channel.

ST. LUIS.—The city of St. Luis, the capital of the province of Maranham, is the seat of government and of the bishop. It occupies two small hills, situate at a short distance East and West from each other, and separated by a little valley. Several buildings are remarkable from their size, particularly the public edifices, several convents and churches, of which the principal is the cathedral, occupying the North side of a square plain, covered with grass, and lying before the palace of government. The streets are generally at right angles, but the inequality of the ground renders a walk fatiguing. The city is described hereafter.

Vessels may find at Maranham the chief resources required by the exigencies of navigation. The safety of the port permits careening; the water is good and abundant, and on the island beef and rice are equally gotten; but, if in want of considerable quantities, they may be most advantageously obtained on the Alcantra or continental coast; because this is, in every respect, more fertile than the island, and more abundant in cattle, fruits, &c.

M. Roussin says that the temperature of the air is very high in the city; more especially from the month of December to that of June. St. Luis, standing on the West side of the island, does not experience, generally, the salutary winds from the eastward; those which arrive being very weak.

With regard to the winds, and other phenomena, the year may be here divided into two seasons; winter, which begins in December and ends in May, and summer, which prevails during the other six months. The first of these two seasons is that of the rains; they fall abundantly, and are accompanied with violent storms, especially in the months of February, March, April, and a part of June. The thunder and lightning are then almost permanent, and, in the squalls, the wind blows with great force from the North to the S.W. by S. Nevertheless, they do not experience at Maranham *hurricanes*, properly so called; and, even in the worst times, there are long intervals of tolerable weather. There are frequent falls of rain in the summer; and, in this season, the regular winds are mostly from E.S E. to N.E. by the East, these being the *general winds*.

---

* MARANHAN OF MARANHAM.—It is to be regretted that we have not yet a standard nomenclature for proper names.

The air at Maranham is generally healthy; but in the season of the rains fevers of a dangerous nature at times prevail, though they commonly yield to appropriate treatment. The best preservative is a regimen exempt from excess; the chief remedies are the evacuants, particularly the emetic.

The commerce of the port consists in cotton, rice, hides, ginger, and ipecacuanha. The quantity of the first article, cotton, exportable in 1820, amounted to 70,000 bags, of the weight of 170 lbs. each.

The TIDES are regular at St. Luis, and in the bay of St. Mark. At the anchorage before the harbour of St. Luis the flood sets to the S.S.W, and the ebb N.N.E. The velocity is $1\frac{7}{10}$ miles an hour, in ordinary tides; spring tides, $2\frac{1}{2}$ miles. In the last case the difference of level between high and low water is $16\frac{1}{2}$ feet, according to observations made thirty-six hours after the full moon of January, 1820, near Fort St. Antonio. In ordinary tides the vertical rise of water is not more than 10 feet. High water in the harbour, on the full and change, at 7^h.

DESCRIPTION BY MR. HENRY KOSTER.—This gentleman, in describing the Port of Maranham,* says that they took the channel to the eastward of the Middle Bank, then passed the Fort of St. Marcos, and came to an anchor very near to the sand banks at the mouth of the harbour of St. Luis. No pilot came off, and the master, with Mr. Koster, got into the boat, intending to fetch one, when a signal with an enormous speaking trumpet gave orders not to proceed to the city, and they were informed that a pilot would come in due time. A pilot at length arrived, accompanied by a soldier and customhouse officer. As the brig went up the harbour, she received the health and customhouse visit, composed of men smartly dressed; the administrator of the customs being in the uniform of a cavalry officer; but the regulations of the port proved to be both tedious and troublesome.

"*The harbour* is formed by a creek in the island, and is to be entered from the Bay of St. Marcos. The channel is of sufficient depth for common size merchant ships, but is very narrow, and not to be entered without a pilot. Opposite to the town the water is shallow at the ebb.

"The Island of Maranham forms the S.E. side of the Bay of St. Marcos, consequently this bay is to the westward of it. To the eastward of the island is the bay of St. Jozé. From some similarity between the Point of Itacolumi, by which vessels are in part guided, when about to enter the Bay of St. Marcos and another point of land upon the small Island of St. Anna, which is at the entrance of the Bay of St. Jozé, instances have occurred of vessels mistaking the latter for the former, and entering the Bay of St. Jozé.† This error causes great danger and inconvenience; because, owing to the prevalence of easterly winds, it is next to impossible for a vessel to beat her way out of it. It is, therefore, necessary that she should go through the narrow channel, between the main land and the Island of Maranham, a passage of considerable difficulty.

"The Bay of St. Marcos is spotted with many beautiful islands. The width, from St. Luis to the opposite shore, is about 4 leagues. Its length is much greater; toward the South end there are several sand banks, and the water is shallower. It receives here the waters of a river, along the banks of which are situated several cattle estates; but the river Itapicuru, which runs into the narrow channel between the main land and the island, enjoys the greatest share of cultivation; its banks are extremely fertile, and upon them have been established the principal plantations of cotton and rice, which are the two chief articles of commerce from Maranham. The island is, in itself, very little cultivated. There is no considerable plantation upon it. A few of the rich merchants residing in the city have country houses distant from it about 1 league, but the remainder of the lands

---

*** In or about 1818, therefore prior to the visit of M. Roussin.**

† *This will, in future, be obviated by the Lighthouses.*—Ed.

are left untouched, owing, it is said, to the unfitness of the soil for the purposes of agriculture.

"The importance of the province has increased very rapidly. Previous to the last sixty years no cotton was exported; and I heard that, when the first parcel was about to be shipped, a petition was made by several of the inhabitants to the *Camara*, or municipality, requesting that the exportation might not be permitted: for, otherwise, they feared that there would be a want of the article for the consumption of the country; this, of course, was not attended to; and now the number of bags exported annually is more than 50,000, averaging about 180 pounds weight each. The quantity of rice grown there is likewise great; but the sugar which is required for the consumption of the province is brought from the ports to the southward. Some sugar cane has lately been planted, but hitherto molasses only have been made. I heard many persons say that the lands are not adapted to the growth of the sugar cane. The cotton and rice are brought to St. Luis in barks of about twenty-five or thirty tons burden. These come down the rivers with the stream from the plantations; their return is not, however, so easy, as they are obliged to be rowed or warped, but being then empty, or nearly so, the difficulty is not very great.

"Considerable quantities of manufactured goods have been sent out from Great Britain since the opening of the trade, as has been done to the other principal ports upon the coast; but a ready sale has not been found for them here to any great amount. The province of Maranham will not bear comparison with that of Pernambuco. It is still in an infant state; there still exist wild Indians, and the plantations upon the main land are in danger from their attacks. The proportion of free persons is much smaller; the slaves very much preponderate; but this class can, of necessity, use but little of what is in any degree expensive of what in such a climate is mere luxury. There exists at St. Luis a great inequality of ranks; the chief riches of the place are in the hands of a few men, who possess landed property to a great extent, numerous gangs of slaves, and there are also merchants. The wealth of these persons, and the characters of some of the individuals who enjoy it, have raised them to great weight and consequence; and, indeed, one governor knows to his cost, that, without their concurrence, it was useless to attempt the introduction of the innovations proposed, and impossible to trample long upon the rest of the community. But the great inequality of rank bespeaks the advancement of this place to have been less rapid than that of other settlements farther South, where the society is more amalgamated, and property more divided. As a port of trade with Europe, St. Luis may be accounted the fourth establishment upon the coast of Brasil in point of importance, giving precedence to Rio de Janeiro, Bahia, and Pernambuco."

The CITY of SAN LUIS DE MARANHAM* is situated on the north-western extremity of the island of the same name, which is only separated from the main land by a narrow channel, called the Maranham River. Its population is estimated at 33,000, including a few English and French commercial houses. The city is divided into two parishes, and contains thirteen churches and chapels, three monasteries, one *recolhimento of educandas*, and six hospitals, of which the Misericordia is the principal. It has a lyceum, a Latin school, two primary schools for boys, two for girls, four private schools, and an ecclesiastical seminary, in one of the monasteries. As a city, Maranham ranks as the fourth in the empire.

---

* The PROVINCE OF MARANHAM is bounded on the West by Parà, with the sea to the North, Piauhy to the East, and Goyaz on the South. The River Maranham gives its name to this province. It was first entered by Pinzon in 1500; thirty years afterwards the country was erected into a captaincy; but the first settlement was made by Ravadiere, a Huguenot, who who sailed from Bretagne in 1612. Several expeditions having been made to the country, which either failed or perished, Ravadiere and his companions erected a fort on the present site of Maranham, and built a warehouse and other houses. The French were expelled some years afterwards by the Portuguese; it was afterwards occupied by the Dutch. The early history of the province is a record of misfortunes, cruelties, and nearly at all times of the slave trade.

The borders of its numerous rivers are considered fruitful, and it has certainly prospered, when compared to many other parts. Indigenous fruits are abundant. Cotton and rice appear more attended to than any other products. Rice is said to be far better adapted to the soil than the sugar cane. The province is said to be rich in minerals. Fish of excellent quality is abundant. Sheep, cattle, and horses multiply fast. The Itapicuru is its largest river. It is rapid, but navigable in the middle parts by flat-bottomed barges, in the lower by small sailing vessels, and in the upper by canoes. Cotton and rice are the chief crops grown on its banks. It flows down in many parts through a fertile country.

Maranham is said to be better built than any other city of Brasil. Mr. Kidder, in 1844, says:—"It exhibits a general neatness and an air of enterprise, which rarely appears in the other towns of the empire. There are, moreover, within its bounds but few huts and indifferent houses. None of the churches appear unusually large or sumptuous, but many of the private dwellings are of a superior order. The style of construction is at once elegant and durable. The walls are massive, being composed of stone broken fine, and laid in cement. Although the town does not occupy a large extent of ground, yet the surface it covers is very unequal. Its site extends over two hills, and consequently a valley. The rise and descent in the streets are in many places very abrupt. Scarcely any carriages are in use, and, corresponding to this circumstance, there is only one good carriage road in the entire vicinity. That road leads a short distance out of town. The *cadeira* is but little known here as a means of conveyance. The *rede*, or hammock, is generally used as a means of easy locomotion. It is very common, both in Maranham and Parà, to see ladies in this manner taking their *passeio* or promenade. Gentlemen in health do not often make a public appearance in this style, although it is generally conceded that they are quite as fond of swinging in their hammocks at home."

The streets of Maranham are laid out in straight lines; and, by the agency of wind and rain, they are kept clean. The pavements are composed of a conglomerate sandstone, the same that is used for buildings; but as they have no gratings, nor even smooth stones for side walks, they are very tiresome and unpleasant to foot passengers. The town contains several ornamental squares, some of which are bordered with trees.

One of the most picturesque walks within the precincts of the city is to the public cemetery. The English have also a Protestant cemetery.

The town of ALCANTARA, or ALCANTRA, stands on the western bank of the Bay of St. Marcos. It has been described by Mr. Koster, who proceeded to it in a sailing boat from St. Luis. The beauties of the bay, Mr. Koster says, are to be seen only in crossing it. The number of islands diversify the view every five minutes. There is but little water on the bar of Alcantra, and as much pilotage is necessary as with a large ship in proceeding to St. Luis. The town stands on a semicircular hill, and at first sight from the port seems very pretty, but falls short of its promise on a nearer examination. Many of the houses are one story in height, and are built of stone; but the major part have a ground floor only. It extends back to some distance, in a straggling manner, with gardens, &c., and is an improving place, the lands in the neighbourhood being in request for cotton plantations. It has a stone kay, a town hall, a prison, and several churches.

Not far from the mouth of the Port of Alcantra is an island, about 3 miles long and 1 broad, called the *Ilha do Livromento;* it is inhabited by one man and one woman (1816), who have under their their care a chapel dedicated to our *Lady of Deliverance*, which is visited by the inhabitants of the neighbouring shore once every year, for the purpose of celebrating, by festival, this invocation of the Virgin.

PIMENTEL says, "Whoever goes to the MARANHAÕ or (MARANHAM) ought to make the coast during the months from December to July, because these are the winter rainy months, in which season the land appears clear and bright, and no high winds then prevail on the coast; but August, September, October, and November are the windy months, and the land during that season is constantly covered with a thick haze; and the higher the wind the more hazy it is. The winds which are constant on this coast are N.E., E.N.E., and East, which are all fair to go into and out of the harbour. On the coast, in general, you may anchor at 2 leagues from the land, but it should not be in less than 8 fathoms at high water."

MARANHAM, with its environs, has been copiously and happily described by Mr. Webster, in his interesting "Narrative of the Voyage of the *Chanticleer*," from which we take the following extracts.

The island on which the city stands is separated from the continent by an arm of the sea, and is about 28 miles long by 15 broad. The city, notwithstanding its situation on an island, is the capital of a large province of the same name, and derives all its importance from the harbour, which is the principal one on that part of the coast.

The harbour possesses merit only by comparison with the few smaller on the coast. *The entrance to it is* extremely narrow and shoal, so that vessels can enter it at high water only; for, when the ebb has ceased, the shoals are so bare that a person might walk across the upper part of the harbour. It is snug and well protected, affording secure and commodious anchorage for several ships. The tides are rapid, rising 18 or 20 feet; the anchorage is close to the town, where there is a very tolerable landing place. Strong winds seldom or rarely blow in so as to create any uneasiness among the shipping.

The harbour presents a cheerful scene, more particularly to a stranger, unaccustomed to the novelty he meets there. There is something enlivening in seeing the numerous coasting vessels skimming along the surface of the water; the peculiarity of their rig, and the extraordinary thatched awning with which they are partly covered, their sails being of the lightest material, and fit only for the fine weather and light breezes which prevail on the coast.

The business of these vessels is to transport cotton from one part of the coast to another. Whole fleets of fishing boats are seen cruising about, some going out to their fishing ground and others returning, the arrival of the latter being announced by the sounding of horns, which may be heard far and near; and, in the midst of these, the attention is continually excited by the incessant crossing and recrossing of canoes manned by African negroes. Some of these canoes are large, and have crews of 12 or 14 persons, who use their paddles with great dexterity, and all the energy peculiar to the negro.

The country about Maranham is by no means attractive. It is without any peculiar features, rather pleasing, here and there picturesque, fertile, and well wooded; and when the distant hills and neighbouring heights of the main land are seen skirting the horizon of the bay, the effect is rather pretty. The banks of the river are adorned with a few country seats, the residences of wealthy proprietors.

The city itself is seated on the eastern shore of the harbour, upon a jutting promontory or neck of land, and is nearly surrounded by water. It occupies the highest ground in the neighbourhood, and is 90 feet above high water mark, being about a mile in length, and half a mile in breadth, and is irregularly built. The exterior of the city has but mean pretensions, and the most respectable parts of the interior are very little better. The streets are narrow, many of them of a low, mean appearance, and without a handsome one among them.

There is nothing in Maranham that particularly attracts the notice of a stranger, unless it be the cocoanut tree, gracefully waving its lofty plume above the houses, and imparting a tropical character to the place.

Near the water side is the market place for the sale of fruit, vegetables, and poultry, with shambles distinct from all. Beef and pork are the only meats to be had there, and these of a very indifferent quality; but the town is generally well supplied with country produce, which is both reasonable and good. Besides the principal market place, there are several other smaller ones in different parts of the town. The bread is excellent, the poultry good, the fruits and vegetables abundant, wines and groceries of a good quality, especially Port wine. The town is in no want of water, wells are attached to most of the houses; but the water in some parts is said to be rather brackish, so that which is used for drinking is brought by the boats from some miles distant and distributed for sale. The mangrove is the usual firewood burned here.

SAILING DIRECTIONS FOR MARANHAM.

Our actual knowledge of the approaches, and the details of the navigation near Maranham, have been comparatively imperfect, inasmuch as a considerable period had elapsed since Captain Hewett surveyed the immediate neighbourhood of the city, and the changes, which necessarily occur in many minor particulars of the banks and channels, rendered our instructions somewhat incomplete.

We are now, however, enabled to give complete and recent instructions for the coast between this and Pará, as the French government have surveyed and published a series of charts of the whole of those coasts left untouched by Admiral Roussin.

The first officer who endeavoured to improve our knowledge of this coast was *M. Ch. Philippe de Kerhallet*, Lieutenant on board *L'Adonis*, between 1837 and 1840, and whose directions were published in 1841. But the principal, published in 1846, are those of Captain *L. Tardy de Montravel*, of *La Boulonnaise*, employed on the survey in 1842 and

1843. From the works of these officers we have corrected our former descriptions, and extracted from them what was necessary to complete the instructions.

We shall first give the directions by Admiral Roussin, and then, though at the risk of repetition, those of M. de Montravel.

DIRECTIONS FOR MARANHAM, BY ADMIRAL ROUSSIN, 1827.

The winds in the environs are mostly from the eastern quarter. It is, therefore, to the eastward that the coast is made, whether arriving from Europe, Guayana, or the West Indies. The only exception is with wind at times between the North and the West. At all other times you gain a sight of the *Lançoes Grandes*, before described. This shore of white sand may be seen to commence about 20 leagues E. by S. from the Isle of St. Anna, and extends, as we have shown, to the verdant coast of Mangrove, which terminates in a great elbow of land, under the meridian of 43° 28′ W.*

Off the coast, at 4 or 5 miles from the Great Lançoes, are from 5 to 6 fathoms of water, but by an error in longitude, very presumable hereabout, you may easily mistake the *Smaller* for the Greater Lançoes; but observe that, when off the latter, you will have the shoal grounds of the River Perguiças to the East, in place of being to the West while off the former. In order to avoid all uncertainty in this respect, hold off to 10 or 12 miles from the coast, and continue your course from 6 to 10 fathoms. At this distance from land you will be between the parallels of 2° 15′ and 2° 30′ S., on a mean direction of W.N.W., which is that of the coast.

Having reached the meridian of 43° 20′, which is that of the middle of the beach of *Mangues Vertes*, and at 7 or 8 miles from shore, you must shape a course northward, in order to avoid the Cæsar's Reef and St. Anne's Breakers, which exist as before described.

Mark well that, in this traverse; the tide will require attention, and a due allowance for it must be according to its direction and strength. The flood on this part of the coast, as already noticed, sets to the S.W., and the ebb to the N.E., sometimes with a velocity of 2 miles in an hour.

There is a considerable resemblance in the Isle of Santa Anna to the beach of Mangues Verdes, but it is more elevated. It ought not to be mistaken for it, as they are separated by a large open space, whereas the coast is altogether interrupted.

Having passed the breakers to the North of the Isle of St. Anna, which may be known by the lighthouse, continue to steer to the West several degrees North, until you come in sight of the breakers of the *Coroa Grande*, which may be approached to the distance of 2 miles.

You may, perhaps, recognise the breakers of the Coroa Grande by the quality of the bottom, of fine sand with black and reddish specks, which soundings become very frequent when you arrive on their meridian; but we repeat, that if the land has been made as we have advised, there cannot be the least doubt as to the position of the vessel, when you see the Coroa Grande; if you have made the Lançoes Grandes throughout their extent, you will have run along a space of 30 leagues perfectly determined.

From the North point of the Coroa Grande two routes present themselves for entering the Bay of San Marcos, and afterwards the anchorage of San Luiz.

The first is by rounding, by the North and West, the Coroa Grande, by means of the lead; the depth in doing so ought never to be less than 9 to 11 fathoms, while you follow the edge of the bank, and then running along the western shore of Maranham, of which you may see the North part at the same time that you do the breakers, if the weather is clear. Independently of the greater height of its coasts, the Island of Maranham is distinguished from that of Santa Anna, in coming from sea, by the white cliffs on its northern part.

---

* **BLAESDALE'S CORAL REEF.**—It is particularly to be observed by those who are making for the S.W., when approaching the Equator, that, near the longitude of 41°, lies a dangerous reef, the existence of which is indisputable, though the exact longitude is not known.

On the 15th of October, 1819, the brig *Richard*, of Ulverston, Captain Blaesdale, struck on this reef, in about 0° 56′ or 0° 57′ North of the Equator, and lon., by account, beyond 41° W. The following is an abstract of the *Richard's* log:—"Friday, 15th of October, 1819; fine moderate weather; ship going three knots; at 6h p.m. grounded; did not remain fast above ten minutes. Water smooth; saw no breakers. In a few minutes after sounded, but got no bottom with 125 fathoms of line. Lat., at noon, by good observation, 0° 57′ N. Run West until 6h p.m. Lon. 41° 22′ W. The vessel drew eleven feet of water; in one hour there were 18 inches of water in the well. When the ship arrived at Pará, whither she was bound, three holes were found, each about the size of a man's hat, and nearly through her bottom, and several large pieces of white coral were sticking in different parts."

The first point of Maranham, which will be seen to the southward, on passing the banks of Coroa Grande, is that of *San Marcos*, or *St. Mark*, which gives its name to the bay. It is a high, bluff point, and on its height is a guardhouse and signal staff. A broad shelf extends from and to the S.W. of the point, along the coast, with flats of rock and sand to more than 700 fathoms from the shore, which must, therefore, be approached with caution.

On continuing the route to the S.W. and S.W. ¼ S., you will make the parallel of the little fort *San-Antonio de la Burra*, situate on the point *das Areias* or *Areas*, which is the North point of the entrance of the harbour of St Luis.. Here ends the flat of rocks and sand above noticed, and to the point you should not approach nearer than half a mile, at which distance may be found from 35 to 40 feet of water, where you may anchor.

The best and most frequented route to St. Luis is taken by gaining a sight of the *Morro Itacolumi*, before mentioned, a small mountain of the continent, upon the western coast of the Bay of St. Mark, nearly on the parallel of the North part of the Coroa Grande; this mountain resembles in shape a pointed cap with very broad sides; it is entirely covered with bushy trees, and may perhaps be seen at 5 leagues off, in clear weather. By this insulated hill the coast may be readily known: the land to the North of it suddenly taking a western direction, and to the southward are red cliffs, trending S.S.E. There is no similar mark in the vicinity; and it is, therefore, noted both on arrival and as a point of departure.

The LIGHTHOUSE is a quadrangular building, erected on the cliff of Mount Itacolumi, the sides of which face the cardinal points, and is 75 feet high from the base, and 147 feet above high water mark. It shows a revolving light of two distinct colours, one being of the natural appearance, the other of a *red* colour, these lights being alternately visible and invisible for about two minutes in each revolution. It was first lighted on Jauuary 1st, 1839.

On approaching Mount Itacolumi, it appears in the shape of a gunner's quoin, and is remarkable only from the low land in the vicinity. From the lighthouse on St. Anna's Island it bears W. ¾ N. nearly 15 leagues. When this mount is descried, shape a course to bring it to bear W.N.W., and, according to judgment, about 4 leagues distant.*

When you are within 6 miles to the East of this lighthouse, and about to enter the Bay of St. Marcos, the route is due South, 15 miles, that is to say, to the parallel of, and a league to the East of Point Tatinga. From this position you can steer S.S.E. directly for the point of San Marcos; but you must not steer this direct course while the ebb tide or high water lasts, in order to avoid being driven by the flood on to the north-east point of the Bank da Cerca, on which there is but little depth at low water. It will be better then to steer 4 miles to the S.E. from 3 miles East from Tatinga. This route will carry you nearly 2 miles to the N.E. ¾ N. from Point San Marcos. From this last position run along the coast of Maranham, at 700 or 800 yards distance, in 9, 12, and 8 fathoms, to the anchorage, as directed in the first route.

In all the extent of this passage from the parallel of Itacolumi, the only attention required (besides sounding continually, as indeed ought always to be done while near shoals or the land) is to keep, until you are on the parallel of Point Tatinga, to the West of the North point of the only danger, which is called by some here the Middle Bank (Bank do Meio); † and to do this it will be sufficient to keep 4 or 5 miles from the coast of the continent, as you run along it to Point Tatinga. After having advanced thus far toward the entrance, and having crossed the bay to find the Point San Marcos, you will have a good mark to assure yourself that you are to the East of the Bank da Cerca, and at a sufficient distance from the bank and from the coast of Maranham; it is to steer so as to keep a small space open between the two small islets (Espera Isles) lying to the South of the Isle do Medo.

---

* From this spot *Ponta Tatinga*, or *Alcantra Point*, will be open of Point Piraremo, and bear S.W. by S. Here anchor, if the night is far advanced, or the weather thick.

† This bank was not examined by Admiral Roussin, but it is fully shown by Captain Hewett, in our chart of this coast. It was surveyed by Captain de Montravel, of the French Marine, as shown hereafter.

St. Mark's Point, having on it a square tower, cannot be mistaken. On approaching the point, a sandbank, dry in many parts, will be seen at about 2 miles N.N.E. of it; the *Banca da Cerca*, or *Acercas Bank*, to the westward, will also be seen, breaking in many places. Between these is the channel to ST. LUIS' ROADS. On passing St. Marcos Point the rocks will be seen to the westward of it; but by giving them a sufficient berth, and bringing the body of the *Isle do Medo* to bear S.W., and the fort on *Ponto das Areias* South, you anchor in 15 fathoms, sand and mud. On the foul ground off St. Mark's Point many anchors have been lost.

The best anchorage before the mouth of the harbour is at 600 fathoms to a mile from Fort St. Antonio, or Ponta das Areias, with the fort bearing S.E. by E. ¾ E. In this position there are from 30 to 45 feet of water, at low ebbs. Small vessels go higher up, toward the bank of the Isle do Medo.*

The anchorage before St. Luis is bounded, on the South and south-west, by the *Ponta da Guia*, appertaining to Maranham, by the Isle Medo, and several shoals, on which there is little water at low tides; to the East and the N.E. by the coast of Maranham; to the S.E. by the banks which bound the South side of the entrance into the harbour; lastly, at about 2 miles to the N.W. by the Bank da Cerca, before mentioned, and which has, in some places, only 6 feet over it at low water.

Beside the passage on the N.E. of the bank, leading to the anchorage, there is another on the S.W., between it and the Isle Medo, but the latter is taken only with winds between North and South by the West; when they are easterly, it is obvious that, for attaining the roadstead, the passage by the Maranham coast is always preferable.

The entrance of the harbour of St. Luis is not difficult for small vessels, but those of great draught cannot tack in the channel, unless the wind be favourable; and they must have a pilot.

The least depth found on the bar of St. Luis, in 1820, was 11 feet at the lowest ebbs, and nearly 27 feet at high water; but from a subsequent examination it appears that there is now less, and that the channel is growing up. The mud bank on the South side of the channel is partly dry at half tide.

Those vessels whose draught will not allow them to enter the harbour of St. Luis, and which may require some repair, may find a tranquil anchorage in the little bay or cove of *Ataki*, to the S.W. of Maranham, having a bottom of mud or ooze, with 15 or 16 fathoms of water; the current less rapid than before St. Luis, and the sea always smooth. After doubling the Isle Medo on the West the distance to it is 1 or 2 miles.

DIRECTIONS FOR MARANHAM, BY CAPTAIN L. TARDY DE MONTRAVEL, OF THE FRENCH MARINE, 1847.

The Bay of of San José, though filled with shoals, offers nevertheless a channel between the Island of Santa Anna and the continent, which leads to the anchorage of San Luis, going round the South side of the Isle of Maranham. But this channel is of most difficult navigation, and is very seldom taken by any vessels, and then only because, by entering the Bay of St. José by mistake, or driven there by the force of the currents, they are obliged to continue so dangerous a route. As the flood tide runs rapidly to the S.W., to the mouth of the bay, it is prudent, on leaving the beach of Mangues Verdes in order to pass well to the North of the breakers of Santa Anna, to avoid their influence, to go further northward in the track. The banks of Santa Anna being very steep, they can always be passed safely at a short distance, taking care to avoid the effects of the flood tide, which is estimated here to run 2½ and 3 miles an hour. If there should be a slight breeze, and you pass too close to the reefs, you may be driven on them, or else into the West part of the Bay of San José, and find yourself in a very critical situation.

---

* Captain Wellesley has noted two spots for anchorage; the first in 16 fathoms, with the fort S.E., and that of St. Mark E.N.E.; the second, with Fort Antonio E. ½ S., and Fort St. Mark N.E. by E. These marks show the extremities of the good ground; the second station is recommended as the best. The *Sapphire* never lost an anchor; while vessels near her commonly did.

Coroa Grande.—Supposing, then, that you pass 3 miles to the North of these banks, when on the meridian of the lighthouse, you will steer W. ½ N. to pass some miles to the North of the extreme point of the Great Bank of Coroa Grande, which extends 12½ miles northward of the North point of the Island of Maranham. This bank is formed of several flats, of which the three principal generally, but do not always, break. The corvette *La Bergère*, which anchored for two days on this bank, observed that it always broke while the ebb lasted, and that the three principal groups did not show during the second half of the flood. It has been said that there are some channels across the Coroa Grande, and between it and the coast of Maranham, but the navigation of *La Bergère* proves positively that they are scarcely navigable.

When, after having left the meridian of Santa Anna, you have run 26 miles on the track I have mentioned (in which route the force of the currents ought to be taken into account, the mean rate of which may be taken as 2½ miles, the flood running *S.* 56° *W.*, and the ebb *N.E.*), you will be through the northern groups of the Coroa Grande, the breakers on which will have been seen if the state of the sea allows it.

Morro Itacolumi.—You will then steer West and make the Morro Itacolumi, before described. On this point is the lighthouse, which was much required; but as the ground on the Morro was not sufficiently firm for such an erection, it was, therefore, built on the cliff itself, 1,090 yards E. ¾ S. from the Morro; the light, revolving, alternately red and white. I have often heard complaints from captains of the careless way in which the lights on Itacolumi and Santa Anna were managed; but as for myself, during the time that I was employed in sounding the Bay of San Marcos, I did not observe any neglect in this important service; it is as well, however, to be on your guard.

In fine weather the Morro Itacolumi may be seen 18 or 20 miles off, like a small conical islet on the horizon, and will continue so between East and West, to the distance of nearly 10 miles.

Point Tatinga.—Then steer S. by E. so as to bring Point Tatinga, the extreme land in sight to the S.W., to bear S.W. ½ S. With this bearing on, run S.S.W., so as to bring the same Point Tatinga to bear S.W. by W., and then run for Fort San Marcos, which you will see on the horizon like a small hill, bearing S. ½ W.

Coroa Peixada.—In the route we have described you will have constantly had a depth of 15 to 18 fathoms, except in one part, about 13 miles West of the Morro Itacolumi, where there is a bank, on which 3½ and 4½ fathoms will be found, known to the pilots by the name of the *Baxo* or *Coroa de Peixada* (Fishing Bank). It extends about 2 miles N.E. and S.W., with regular declivity, though the East and West sides are steep. It offers no danger to a vessel drawing less than 16 feet, but will be a good means of ascertaining your position on the parallel of Itacolumi. Having made this bank, and proceeding southward, you will bring Point Tatinga to bear S.W. ½ S.

Coroa das Almas, Bank do Meio.—In following the previous route you will have left to starboard the *Coroa das Almas*, and the great flat of unequal depth which runs off the shore, and which, bearing to the South to Point Pirarema, follows in an irregular curve the N.N.W. direction of the land as far as the parallel of Itacolumi. To the left hand you will have passed along the Bank do Meio, mentioned by Admiral Roussin, which lies in the middle of the Bay of San Marcos, and is 6 miles in length, S.S.W. to N.N.E., with a mean breadth of half a mile.

It chiefly consists of fine grey sand, very light, and marked with black specks, into which the anchors penetrate deeply. When at the South extreme of the Bank do Meio Point Tatinga will be on with the centre of the Isle Livramento, bearing W. by S. ¾ S.; Fort San Marcos, S.S.W. ¼ W.; and the white patch of Pirarema, W. ½ N. From the extreme North end Point Tatinga will bear S.W. by W.; Point Pirarema, W.S.W.; and Itacolumi, N.W. by W. ¾ W.; but from this point it will not be possible to see the land distinctly, unless the weather is very favourable.

The soundings vary on this bank from 13 feet to 6 fathoms at low water; its western side is steep-to, so that the lead affords no indication of your approach, and, at the same time, the great distance of the land renders this still more uncertain. The Coroa das Almas, which forms the other side of the channel, has the same difficulty in distinguishing by the lead.

The only directions that can be given for avoiding both these banks is to keep the highest part of Point Pirarema within the angle between the bearings of S.W. ¼ S. and

S.W. by W. For its south-western extreme, you will go clear of it by keeping between the coast and the Morro of San Marcos on the bearing of S.S.W.

Bayadère Passage.—Having well recognised the breakers of the Coroā Grande, and you wish to run to the anchorage of San Luis de Maranham, passing on the eastern side of the Bank do Meio, you must follow the directions given by Admiral Roussin, previously described.

Outer Anchorage.—When, by either of these routes, you have come within 2 miles to the North of Fort San Marcos, you should wait for a pilot if you wish to enter the Port of San Luis. If you mean to anchor outside, you must steer on the middle of the *Boqueiraō*, a channel formed by the Isle do Medo and the Islet Espera, and you must anchor when you bring the Fort San Antonio, which is raised at the entrance of the port on a sandy point called Ponta das Areïas, to bear S.E. by E. ¾ E.

By keeping the Boqueiraō open you may be certain that you are to the eastward of the Bank da Cerca.

Interior Anchorage.—I would not advise any captain who has not been frequently in this port to bring in his vessel without having previously taken a pilot at the bar. If, nevertheless, it is indispensable that he should enter at once, these are the directions to follow:—At low water the banks are sufficiently uncovered to show the passage perfectly; but it is not so at high water. You must then steer so as to pass a short distance from Ponta das Areïas. When you have opened Point San Francisco, and the eastern angle of the barracks, nearly a sail's breadth, bear round quickly to port, and then run on so as to pass at a cable's length or more to the South of Fort San Antonio, whence you may bear up for the city, keeping to the windward side. It would be as well, when you are abreast of Point San Francisco, to bear off a little so as to avoid a point which projects from it under water.

Point das Areïas and Bank da Minerva.—The only two points to dread are these, which form the South point of the entrance of the port; to ground on either of them is dangerous, for the sea sometimes breaks on them very heavily, but all over the port, to run aground only occasions loss of time and trouble.

The anchorage before Fort San Antonio is the most commodious on account of its proximity to the port, but the sea is frequently heavy in the season of strong breezes; and the bottom being of madrepore, covered with a bed of sand, the loss of anchors is also to be guarded against.

Anchorage to the South of the Isle do Medo.—The anchorage which is best adapted for vessels with a large draught of water, and which have to make some stay at Maranham, is that to the South of the Isle do Medo. There will be found at that part a depth of 11 fathoms, with a bottom of sand and mud, and always sheltered from the sea. It is still better at the back of Point Ataki; but that to the South of the Isle do Medo has every security, and at the same time has the advantage of being nearer the port.

The track to this anchorage is to steer so as to pass to the West of the Bank da Cerca, and to go round the Isle do Medo to westward, so as to come to the anchorage on the South. A glance at the plan will show better than any directions how readily this anchorage is arrived at.

TIDES.—The tides are regular in the port of Maranham, and throughout the bay. The directions of the currents vary a little in different parts; at the anchorage of La *Bayadère* the flood runs S.S.W., and the ebb N.N.E. South of the Bank do Meio they run, the one to the S.W., and the other to N.E. The maximum rate, 1¾ miles in ordinary tides, and 2½ miles at spring tides. The rise and fall is 11 feet in ordinary, and 17 ft. 9 in. at spring tides, according to the Pilote de Brésil, at the entrance of the port. At the customhouse quay, within the port, we have found the ordinary rise and fall 10 ft. 9 in., and 16 ft. 5 in. at spring tides. The time of high water (establishment of the port) is 7 hours. The position of the West bastion of the sea battery is lat. 2° 31′ 45″ .7 S., lon. 44° 15′ 44″ W. The variation of the compass, observed at Point San Francisco on the 9th of March, 1845, was found to be 0° 28′ W. In January, 1820, at Fort San Antonio it was 1° 37′ E.

Directions for leaving the Bay of Maranham.—Supposing a large ship wishes to leave the Bay of San Marcos, and she is moored before the entrance of the port with the wind from between E.N.E. and E.S.E., she will get under way at high water, and steer W.N.W., to pass to the South of the Bank da Cerca, which will be passed when the little islet to the N.E. of the Isle do Medo lies to the East of the easternmost of the two Espera Isles. The lead will be a sufficient guide. Then bear up as close as possible to the wind, and run on until you are about 2 miles from the shore of the continent.

So long as you are to the South of the white patch of Pirarema bearing W. ⅓ N., you may tack from one side of the bay to the other without fear of the Bank do Meio; but, when to the North of this bearing, you must keep within the following limits:—To avoid the Bank do Meio, you must, while to the South of the high lands of Point Pirarema, keep to the West of the bearing of Fort San Marcos to the S.S.W. ½ W., and when you have passed to the North of the parallel of the same high lands of Pirarema, you must keep to the West of the bearing of Point Tatinga at S.W. by W. The Coroã das Almas and the Bank of Pirajuba are cleared by keeping eastward of the line of Point Tatinga on with Point Raymondo, bearing S.W. ¾ S. These banks being too steep for the lead to give any indication on approaching them, it will be prudent to keep within the above bearings.

Leaving the port at high water thus, a vessel, though of large draught, can keep on the larboard tack without fearing the Bank da Cerca, on which there will be a depth of 20 feet at high water. A small vessel also, at any hour of the tide, need take no notice of the Bank do Meio, as there is never less than 13 feet on it at low water; and from thence you may tack from one side of the bay to the other, that is to say, from the Banks of Coroã Grande to those of the Almas; but as the ebb will be stronger on the western side of the bay, it will be better to tack in that part of it. It is for this latter reason that the pilots prefer the western passage for large ships on leaving to the eastern, in which, nevertheless, the lead is a better guide than in the first.

I would advise a vessel, which, leaving too late, or hindered by any cause, cannot get out in a single tide, to take the eastern channel in preference, in order to choose an anchorage at the end of the ebb tide. The sea there is quieter, and the bottom better than in the western channel.

A vessel which has but a short time to stay in the Bay of San Marcos will do well to stop at the anchorage called, by those who frequent the bay, the *Road das Alagoas*, to the N.E. of Fort San Marcos; there will be found an excellent bottom in 10 and 11 fathoms water, and the sea quiet.

A vessel brought to the parallel of the Morro Itacolumi is considered as being out of the bay, and is then left by the pilot.

DIRECTIONS GENERALLY FOR PROCEEDING TO MARANHAM, ETC. BY CAPTAIN THE HON. WM. WELLESLEY.

The best landfall for vessels from sea is the *Lançoes Grandes*, between lon. 42° 45′ and 43° 12′, the whiteness of which, *already described*, is remarkable. Crossing the Equator in lon. 40° 40′, the true course to this coast (*not allowing for current*) will be S.W. Run boldly to the western extremity, and you will thence make the green or verdant land about *Mangues Point*, with the lighthouse on St. Anna's Island, &c.

In proceeding for Maranham it may be supposed that the land is made in the morning about the *Lançoes Grandes*. You will be running down to near the land, probably on a S. by W. course. Having seen it clearly, haul off to W.N.W., and, having arrived at their termination, you will run about 10 or 15 miles along the coast, nearly quite green, the "*Mangues Verdes.*" From the mast-head St. Anna's lighthouse will be in sight as you run along, bearing perhaps about S.W. by S. It will be seen before the island on which it stands, and makes like a vessel under sail. You are not sure of making the island itself, until Mangues Verdes, or Green Mangrove Point, bears S. by W.; and it is essential to bear in mind that the lighthouse is not on the northern extremity of the island. The dangerous shoals which run in a N.E. direction off it will now be made out: and, if you think the flood is setting you in, haul off in time to N.W. by W.

Having brought the reefs of St. Anna's Island abaft the beam, a W. ⅓ N. course may be steered with safety until the "*Coroã Grande*" breakers are passed. A N.W. by W. course has been recommended, but the *Sapphire* steered W. ⅓ N. on the flood, in perfect safety, making the two breakers; but steering the same course upon the ebb, she was obliged to keep away W.S.W. to make them.

The *Coroã Grande Shoals* always break, and Captain Wellesley says, "I think it better to make them, because you get a fresh departure, which is advantageous if night be coming on, and you wish to anchor. If you do not wish to make them, W.N.W. may be steered for 15 or 20 miles, and then West, until Itacolumi is seen ahead. This mountain is the highest land on the coast, and makes at first like a small round island. Almost immediately afterward the adjacent land appears, and then it takes something of the shape of the quoin of a gun. I think 15 miles the very utmost distance at which this land can be seen, and it is likely that you will not be more than 10 or 12 miles off when it is reported from the mast-head. The less water you have the closer you will be to it.

If, in approaching, you should have as little as 9 fathoms, or less, haul off to the South, and gradually keep away again to S.S.W., when you deepen the water, which course will take you to *St. Mark's Fort.* If, on making it, there should be a depth of 14 fathoms, S.S.W. may be steered at once. In running up this course bear in mind that the flood sets toward *Alcantara* and over the *Cerca Bank*, and the ebb, on the contrary, will check you over to the Middle Bank, and toward the edge of the Coroá Grande.

Now look out for St. Mark's Point ahead: it ought to bear from S. by W. ½ W. to S.W. by S., and should you be in the middle of the channel you will hardly gain soundings with the hand lead; should you have as little as 9 or 10 fathoms, you will be upon the edge of the *Middle Bank:* and, as a precaution, should keep half a point or a point more to the westward; 14 fathoms is a very good depth to run up in all the way, and you may anchor in that depth off *Fort St. Antonio.*

The land about St. Mark's, when first seen, makes like two small islands, the easternmost one having two sand hills upon it, which look like two roads. The round fort and flagstaff soon appear, for which keep the ship's head, and Fort St. Antonio will be seen like a long, low, red house, a little to the westward of St. Mark's. When you are within a mile of St. Mark's Fort run along the land until you bring the fort to bear N.E. by E., and Fort St. Antonio E.S.E., then drop your anchor in from 10 to 14 fathoms.

When near the anchorage, the only danger to be apprehended in a large ship is from the *Banca da Cerca*, which lies at about a league offshore, and the northern point of which lies nearly N.W. from St. Mark's. Unless there be a very strong tide running, or the ship is beating up, you do not come near this; if you should, however, the soundings decrease very gradually, and indicate its vicinity.

In beating out, the pilot took the *Sapphire* out over its North end, in 5 fathoms; and at low water there *may be* over its centre as little as 16 feet. A mark for clearing it is not to shut in with Point Ataki the two small isles [*Espera*] which lie off it. But, in common cases, the bank does not lie within the track.

It seldom happens that vessels have to beat from Itacolumi to Maranham, the wind being almost constantly to the eastward; but they usually have to beat out. One tide ought to bring the Mount to bear from W.N.W. to West, when the pilot leaves.

They go about in from 9 to 12 fathoms on either side. The *Sapphire* was twice in 6 fathoms, off the *Carnaveros* or *Pirajuba* Banks, which were found to extend farther out than as laid down. The Baron Roussin's soundings are correct, but perhaps, in certain places, he gives rather too much water. His details of the coast, such as the entrance to rivers and other minutiæ, are partially erroneous;* but it is to be recollected that his was a *survey made under sail.*

The eastern channel has latterly grown up, and is now disused by all excepting small coasters. Having once sighted Itacolumi, it would be difficult to get a vessel into the eastern channel, so much more simple and direct is that on the West.

REMARKS AND INSTRUCTIONS FOR MARANHAM, ETC., BY LIEUTENANT E. STOPFORD, COMMANDER OF H.M. SCHOONER PICKLE, 1832.

The preceding description and remarks, by the Honourable Captain Wellesley, have been amplified and confirmed by those which follow, from the pen of *Lieutenant Stopford.*

Vessels bound to Maranham may cross the Equator in lon. 40° W., which will enable them to fetch the *Lançoes Grandes*, a landfall deservedly recommended by Baron Roussin.

---

* By the recent surveys and observations of Captain T. de Montravel and other officers of the French Marine, this has been obviated in our charts and directions, as will be seen in the *preceding pages, and also* in the subsequent directions for this coast. ED.

It has been customary to make the lighthouse on the Island of Santa Anna, but an error in the longitude will be of less importance in making the Lançoes Grandes.

A vessel arriving off Santa Anna, and not having sufficient daylight for finding her way into the Bay of St. Mark, may lie-to for the night, off and on the lighthouse, keeping it as near South of her as possible, distant 6 or 7 miles. The light may be seen about 15 miles off, but, being badly kept, is not to be depended on.

As there is constantly a heavy swell on the coast, anchorage should be avoided, if possible, as recovering the anchor is both difficult and dangerous.

Having passed St. Anna's Island, if a vessel steers W. ½ N. she will pass the breakers of Coroã Grande at the distance of about 3 miles, and Itacolumi will be descried, bearing about West. When distant about 10 or 11 miles from this hill, change your course to S. ½ W., till the fort and flagstaff of St. Mark are made out nearly ahead.

St. Mark's Point should not be passed at a greater distance than 1½ miles, and so that the Cerca Bank, on the starboard hand, may be avoided. A reef of rocks extends from the point, and in order to avoid these it should not be approached within three-quarters of a mile. Within these limits a vessel may coast along until Fort Antonio bears East or E. by S., when she should anchor, and wait for a pilot.

By following the route to Maranham, before prescribed, a vessel will avoid getting entangled among the swashways of the shoals of the Coroã Grande, which are very dangerous.

The inhabitants of Maranham, in consequence of their harbours filling up, expect to be obliged to transfer their port of shipment to Alcantara. Lieutenant Stopford, who visited this place, is of opinion that it is preferable, in every respect, to Maranham, being easier of access, capable of containing more ships, and allowing them to get in or out at any time of the tide, with the prevailing winds. The depth of water is also greater. H.M. schooner *Pickle* was anchored at about one-third of a cable's length from the shore, in 7 fathoms, at low water, being more than in any part of the harbour of Maranham, even at high water.

GENERAL REMARKS ON QUITTING MARANHAM, AND RETURNING TOWARD EUROPE.

It has been already noticed that on the northern coast of Brasil, in general, there is no difficulty in proceeding along it with the prevailing winds. During five-sixths of the year these winds blow from E.S.E. to E.N.E., and it is easy to proceed to the North, and even to gain a little to the East, by governing the starboard tacks.

In quitting the port of Maranham, and proceeding thence northward, a favourable wind is required, and care must be taken in order to avoid the dangerous shoal of *Manoel Luis*, described hereafter, and which lies as now represented on the chart. The combination of tide and current hereabout renders it necessary to be very circumspect when leaving the bay, or in sailing between it and the shoal of Manoel Luis, as the streams may be very variable.

In supposing the winds to be to the East, N.E., to S.S.E., which are the most frequent, you must take the starboard tack on quitting the roads, and then endeavour to steer so as to make good the route of N. ½ W.

It is requisite to get under weigh at the precise moment of high water; so that the first stretch or tack may carry you clear of the *Cerca Bank*, an approach to which may be known by a sudden change of depth, from 15 or 16 fathoms to 8 and even 5 fathoms, in the interval of time required for heaving out and drawing in the lead.

The *Cerca Bank*, situate in a N.E. and S.W. direction, is narrow. When on the northern extremity, in 9 feet at low water, the eastern side of the northern islet *Espera* appears in a line with Point Ataki, and the Point of St. Mark S. 56° E.

Beyond this, the first tack toward the West may continue, according to the wind and the tide; the ebb being still favourable. The latter sets, as already noticed, to the North and N.N.E. in all the extent of the bay, and one ebb may suffice for carrying the vessel out, provided it be taken, as before recommended, from the moment of high water.

Small vessels may approach the coast, on the West, to the distance of 2 or 3 miles, but it is not prudent to advance so near in a larger vessel, or in less than 12 fathoms.

Having completed the tack to the depth prescribed, and hauled to the eastward, the depths will be found to increase, and it is probable that the second tack to the North will accomplish the passage outward; but, should it be otherwise, you continue to tack while the ebb continues; never lessening the depth under 12 fathoms, and taking every precaution not to approach too near the *Middle Bank*, which is steep-to. The velocity of the stream will be found proportionate to the depths; and the middle of the channel being deeper than the sides, it is consequently in mid-channel that the tide is most favourable.

Should the winds blow from the S.E. or S.W. quarters at the moment of departure, with an appearance of duration, the most convenient route will be made along the Maranbam side and the bank of Coronha Grande; but the channel to the eastward of the Middle Bank requires caution. The leading mark to clear the eastern side of this bank is the tower of St. Marcos S.S.W. ½ W., until the Morro or Mount Itacolumi bears N.W. by W. ½ W., where you will be clear of its North end, and may proceed according to circumstances.

The pilot employed in conducting vessels outward is generally discharged at 2 or 3 leagues to the eastward of Mount Itacolumi.*

The only obstacle now to be feared and avoided, on the route to the northward, is the shoal of *Manoel Luis*, of which a description is subjoined.

SHOAL of MANOEL LUIS.—This dangerous shoal, which lies in the *true* direction of N. 8° E., 77 miles from the Point of Itacolumi, was first explored by M. Roussin, who ascertained its position in 1820. It was previously known only by the number of wrecks which it had occasioned, and M. Roussin found it to consist in several groups of conical rocks even with the water, and separated by intervals unequal both in distance and in depth. Situate in a sea rarely exposed to violent winds, this reef breaks only in short intervals and at low water. It is, therefore, almost impossible to see it, unless when passing very near. Nevertheless, several rocks of the flat have over them not more than from 5 to 15 feet of water, with 8, 10, and 12 fathoms at their base.

The breakers, which rise instantaneously, have the appearance of the spouting of a whale, while the sea is smooth about them; and, when they cease, they leave masses of white foam, which continue for some time. When the sky is serene, the rocks may be seen under water, appearing like great black patches; but these are not visible until too near to be prudent for a vessel to advance to them. After two hours' flood, and only at half a mile off, with the sea smooth, no trace of them will be seen.

M. Roussin examined the shoal on the East, the South, and the West: and he pronounces that there can be no other danger hereabout, in these directions; but circumstances did not allow him to complete an examination from the North.

M. Roussin's observations, at 400 toises to the South of the westernmost rocks, gave for the lat. 0° 51′ 25″ S., lon. 44° 14′ 35″ W. Variation, 0° 57′ E.

The reef, which lies 0° 1′ 30″ East of St. Luis of Maranham, is more than half a mile across from North to South, and about 3 miles in an E. by S. and W. by N. direction. Should a vessel strike upon it she would, most probably, go down immediately; as was the case with the *Venus*, of Liverpool, on the 21st of May, 1814, which ship unfortunately experienced this misfortune, and disappeared in about twelve minutes: the utmost precaution, therefore, is necessary, in order to avoid this danger.

By anchoring for thirty hours near the edge of the shoal, it was found that the tide set regularly six hours each day, the flood to the S.W., and ebb to the N.E., nearly with the same strength, six-tenths of a mile per hour. High water, on full and change, at 5^h. The rise and fall was 12 feet. These remarks have been confirmed by others made by *Lieutenant Lartigue*, in a vessel called the *Lyonnaise*, in 1826, who found the alternate streams to run at the rate of nearly a mile in the hour.

---

* For a knowledge of the bank of soundings off the Bay of Maranham, the naval world is most especially indebted to a small but valuable chart, constructed by *Lieutenant Geo. Crichton*, R.N., in 1813. Its contents, with a corrected longitude, appear on the chart which accompanies these Directions, and render a more particular description superfluous. It may be seen that white sand, with black specks, is predominant all the way from below the parallel of Itacolumi, or 2° 15′ S., to beyond that of St. John's Island, or 1° 6′ S.

On the eastern part of the bank, upon coming from the eastward, the soundings are found more variable. Here are coarse sand, with bits of coral or pounded madrepores, broken shells, gravel, &c., all of which correspond with subsequent descriptions.

The shoal of Manoel Luis was again examined on the 8th of December, 1828, by Captain Geo. Cheveley, during a fine steady breeze, nearly East, and clear weather. This gentleman has said:—The appearance of the reef, on approaching, is only that of a heavy sea, or rollers, hardly breaking in calm weather, and consequently the more dangerous. It is very steep, rugged, and composed chiefly of detached coral rocks. The shoalest part appears to have about 6 feet of water over it, the sea breaking, as it were, through gaps or little channels under water. The extent seemed to be about 1¼ miles from East to West, and from half to three-quarters of a mile North and South. Lat. 0° 52′ 10″ S., lon. by chronometer (Jackson, of Liverpool), 44° 12′ 17″: by another (Hornby, of Liverpool), 44° 12′ 40″; lunars, 40° 12′ 6″. The accordance of these results with those of M. Roussin leaves us no doubt as to the situation of the shoal.

There is perhaps another shoal to add to the previous, lying 50 miles N.W. by N. from the vigia of which the position is given in the journal of Captain *Le Huby*, of the brig *Les Jumeaux*, as follows:—I had left Maranham on October 3rd, 1838, at 2^h a.m., to proceed to Guadaloupe; the 1st of November, at 7^h 30′, the wind at East, slight breeze, fine weather, I perceived ahead a remarkable change in the water, which had become whitish or greenish, with a very short sea, which seemed to rise and break in the direction of our track, which was then N. by W. We were surrounded by these rollers, and large patches under the water made me think that I was over some shoal, and gave me some inquietude as to our position. At 8^h I sounded in 17 fathoms water, rocky bottom, continuing our route in the same direction, and under the same circumstances, the ship going 2 knots. I sounded at 9^h in 19 fathoms, bottom of coral; at 10^h I found similar bottom with 21 fathoms; at 11^h I had 26 fathoms, same bottom; at twenty minutes after noon observed the latitude, the depth was 29 fathoms; at 10^h I sounded without finding bottom at 85 fathoms, the sea had become quiet, and had attained its natural colour.

A good meridian altitude at noon gave lat. 0° 4′ N. The longitude by a good chronometer was 44° 44′. It results from these observations that the shoal I had passed extends from lat. 0° 9′ S. to 0° 4′ N. in a S. by E. and N. by W. direction. From my observations in this part the sea is much agitated, and breaks at intervals in the direction of N.W. and S.E. I think that it may be a part of the vigia of Manoel Luis, and the breakers seen by Da Sylva. Without being able to assert that it may be shoal enough for a vessel to ground on in parts, I think that it is dangerous to cross it in bad weather, on account of the heavy sea which you may meet with.*

VIGIA of M. DA SYLVA.—M. Roussin says that, in 1825, he was apprized of the existence of a group of rocks, said to have been discovered by *M. Da Sylva*, an officer of the Brasilian Marine, and he enters largely into the question whether they may not be those of Manoel Luis. The position assigned to the Vigia of M. Da Sylva is 0° 32′ S., and 44° 17′ W., and it consequently lies, according to this account, 7 leagues to the northward of that of Manoel Luis. But we find that this Vigia of M. Da Sylva has been laid down, in the same parallel, *at a degree farther to the West;* upon what authority we know not; and confess, with sorrow, that we have not more information on the subject.

MARANHAM TO PARA'.

PARA', or GRAND PARA', is the northernmost province of Brasil, and is celebrated for its cotton, sugar, indiarubber, vanilla, chocolate, and coffee. The climate here is very sultry; the woods abound with valuable timber, of great solidity and beauty, and trees that yield odorous balsams.

The more proper boundaries of this immense country are limited by the River Ayapoek, French, Dutch, and British Guiana, on the North of the Amazon, and by the rivers Yamunda, and Madera, on the West, following the Madera South of the Amazon to the Falls of St. Antony, in lat. 8° 50′ South. A recent writer, a citizen of Pará, includes in the province of Pará the whole region West to the Yavari, in 70° West, or the country called the Province of Solimoens, with the exception that the latter region and the greater part of Pará is still uninhabited, except by nomade tribes. The authority of Pará, neighbouring lands. The white sand, of which it is entirely composed, has given to it the name of *Lançoes*. To the E.N.E. of the group of San João a sandbank runs out, on which the sea breaks, and towards the North there is a flat of yellow sand, of very rapid declivity towards the N.W., but gradual and regular to the N.E.

---

* Although we have given this extract, it will be seen by reference to our chart that *Captain W. Hewett*, in H.M.S. *Inconstant*, passed over this tract in 1814, and found the same depths as here enumerated, and as given on the chart.

At 45 miles N.E. by E. from these islands is the Bank of Manoel Luiz; the channel between has been sounded partly by Admiral Roussin and partly by M. Lartigue and M. de Montravel. It is quite clear, and sufficiently wide to be navigated with confidence; nevertheless, it was much dreaded for a long time by navigators. Now that the position of the shoal has been exactly determined, all apprehension has disappeared, and vessels, leaving Maranham, frequent it with perfect security. The breadth of the channel, the close vicinity of the point of departure which can be taken, the passage of yellow sand which the lead shows upon the bank of madrepores, mixed with grey sand, and the progressive increase of depth when you have passed the parallel of the Isles of San João, are sufficient reasons to dispel any dread which this passage caused, and which render unnecessary any extended instructions on its navigation.

BAY OF TURYASSU.[*]—Limited on the East by the Isles of San João, and on the West by *Point Tamandua*. The Bay of Turyassu presents an opening of nearly 20 miles in breadth, occupied almost entirely by sandbanks. It affords anchorage in its eastern part, to the East of the Bank of *Muricitanduba*, an anchorage which is more sheltered the deeper you go in it to the South, or nearer the land. It is prudent, however, not to pass farther to the South than S.E. ¼ S. from the mouth of the first river you come to on the western side of the group, and not nearer the land than in 6 fathoms water.

A vessel of small draught requiring repairs, and consequently making a longer stay, can, by passing through the narrow channel which runs by the principal group, come to an anchor between them and the *Isle Jabaroca*, where they will be more sheltered from the sea outside.

POINT TAMENDUA projects more than 7 miles to the N.E., and off it is the extremity of a line of breakers, which continues along the coast at a mean distance of from 5 to 7½ miles, as far as Cape Gurupi, to which it approaches to within nearly 1¼ miles. This bank, intersected by some cuts, which give access to several intermediate bays, surrounds also the numerous islands which border the coast, and prevent any approach to it.

Near Point Tamandua you may distinguish with difficulty the islet *Motuoca;* then the islands *Acara*, *Muraeasumé*, *Pirucaua*, *San Joaosinho*, each of which gives its name to a bay which it divides from its neighbour on the West. The *Bay of Pirucaua* affords an anchorage of difficult access across the banks, which extend far out to the N.E. from the island of that name.

MORRO PIRUCAUA.—The coast offers one landmark, the *Morro of Pirucaua*, an isolated hill, which is the more remarkable as it is the only one you meet with after the Isles of San João.

To the West of the Bay of San Joaosinho you find the *Isles dos Irmaoens*, and that of *Pria*, separated by *Trumahi Bay*.

From Pria Island to Cape Gurupi the coast recedes, and forms a large bay, with the Islands of *Sumacas*, *Redonda*, *Gurupi*, and *Rasa*, in its opening.

The *River Pria* runs into the eastern part of this large bay, to which it gives its name; the western part takes its name from Cape Gurupi, which bounds it on the West.

CAPE GURUPI is in lat. 0° 54′ 5″ S., lon. 46° 11′ 3″ W., and is remarkable from its distance from the adjoining land, and by the sands which lie at its foot, and rise in several points, in patches and cliffs. The neighbouring islands serve equally to make it recognisable; but these are not the only characters which make it the best landfall of all this coast.

The most particular features of Cape Gurupi are three mountains rising in steps, at equal distances from one another, from the coast of the Bay of Gurupi to a distance of 25 miles in the interior. Although of middling height, they are remarkable, because the land preceding it to the East, and that following to the West, are low, and scarcely to be seen at the distance of 14 miles, while, in clear weather, the hills in question are visible at 25 miles off.

---

[*] "Tury-assu (Great Tury) in the lingoa geral still used among the lower orders and Indians. In Brasil the word *assu* means great, and *mirim* small. The larger portion of the names on this coast belong to the Tupuya language."—*M. de Kerhallet.*

Bay of Pria Unga.—To the West of Cape Gurupi is the Bay of Pria Unga, the western point of which is formed by *Manijetuba Island*, and on the South side of it there are three islands, by which it may be known. The River Gurupi enters, by a mouth of a mile in breadth, the S.E. part of this bay; it is said to be navigable for small vessels.

The edge of the bank off the coast, which we have said approaches Cape Gurupi, again runs off to the distance of 5 miles from the land at *Manijetuba Island*, and running at this distance, as far as the Bay of Caïté, prevents the bottom of the bays from being distinctly seen.

At 12 miles to the W. by N. from *Manijetuba* Island is that of *Carauassu*, forming with it *Priatinga Bay*, and with *Point Anajaes* lying nearly 10 miles W. by N., the *Bay of Punya.*

Japarigue Islands.—Punga Bay is distinguished from that of Priatinga by the two islands called Punga, or Japarigue, which can be seen from midway between the two limits of the bay. Divided by a small channel of about a mile broad, and lying in a line parallel to the track in running along the coast, the Japarigue Islands never cover each other, but remain perfectly distinct and separated. This observation is important, inasmuch as they cannot then be confounded with the islands which lie in the middle of the Bay of Caïté, which is separated from that of Punga by *Point Anajaes.*

To the North of *Point Manitijuba* is a shoal upon which the English steamer *Growler* found three successive soundings of 4½ fathoms in the middle of the deep water soundings. The position was not fixed with great accuracy, and it has been called *Buckle Bank* after the commander of the *Growler.*

CAÏTE' BAY.—This bay, which is the largest on the coast, receives in its South part the river of the same name. It is remarkable for three small islands, which divide it into two nearly equal parts, the outermost of which stands nearly 4 miles North of the bottom of the bay. This last island has on its North side a sandy beach, terminated on the West by a small cliff, by which it may be readily known. These islands cannot otherwise be mistaken for those of Punga, because, as was stated above, the latter always appear well separated, while the former project over each other, and appear as one.

Caïté Bay is closed by the great bank which follows the coast as far as Point Mtouoca. A cut in the bank leads to an anchorage under the islands, but it is difficult to use, and only practicable for very small vessels.

Manitijuba Island is low and wooded, and forms the West Point of Caïté Bay, which divides it from the *Bays of Coati*, *Paru*, and *Miriquiqui;* these have for their common limit a point jutting to the northward called *Japirica*,[*] which is distinguished from the surrounding coast by its being rather higher, and by the reddish colour of its extremity; besides this it is remarkable for appearing, more particularly from E.N.E., as an island rounded at the summit, and well separated from the land.[†]

The West point of *Miriquiqui Bay* is distinguished by a clump of trees higher than those which cover the neighbouring coasts. It has, seen from some distance to the northwest, the appearance of a fortification, and is known to the mariners here under the name of Carro de Mato (the load of bushes), a name which also belongs to the point on which it stands.

---

[*] This point is also called *Falso Corro de Mato*, to distinguish it from the East point of Caïté Bay, for which it is sometimes mistaken.—*Lieutenant de Kerhallet.*

[†] "The Bay of Salinas Falsas presents the following resemblance to that of Salinas. First, downs of white sand, principally on their western side. Second, a long beach of very white sand, which produces, at a certain distance, the effect of breakers; and the summit of the coast being covered with trees in both. The principal differences between them are these:—First, the Bay of Salinas Falsas is very deep, and you can hardly see the land at the bottom. That of Salinas forms but a slight curvature in a semicircular form, in the middle of which stands the village. Second, Carro di Mato, the eastern point of the one, is peaked, and has a clump of trees on its summit, and appears of a blackish tint at 7 miles off. Atalaia, the East point of the other, is less peaked, and terminates in a long point of sand; at 7 miles off you can discern its reddish tint and its rocky character; it has only some bushes on its summit. Third, after having doubled Point Carro di Mato, you can see some land more to the North than it is, whereas beyond Atalaia the land only forms a long line, without any projections, to the North as far as Point Curucua, and you also then cease to perceive the breakers."—*Kerhallet*, p. 31.

In coming from the East you will see, if the weather is clear, some land which is sensibly elevated above that around; this is *Mount Piraussu*, lying nearly 3 miles S. ¼ W. from the village of Salinas.

BAY of SALINAS FALSAS.—After the Bay of Miriquiqui comes that of Salinas Falsas, remarkable for the downs of white sand lying at the eastern point of the bay. Seen from sea they show like breakers or ship's sails: one of them in particular, separated from the three principal, and raised above the water, is just like a boat's sail with the sun shining on it.

Soon after having made out these downs you will have no difficulty in seeing the West point of the Bay of Salinas Falsas. It then appears like a small, round island, but soon joined to the continent by small hummocks, and forms but one shore with the bottom of the bay. This extreme point, called *Atalaia Point*, is in lat. 0° 33′ 5″ S., lon. 47° 16′ 47″ W. At nearly 2 miles from its extremity, which is of a somewhat reddish colour,* it shows a beach and downs of white sand, spotted with patches of verdure, while the thickets, which crown its summit, merge into the trees of the interior. A small hillock of white sand, at the East end of the beach, is rather remarkable.

POINT ATALAIA LIGHTHOUSE exhibits a fixed light, varied by a flash, visible every two minutes at 17 miles off. It appears as follows:—bright white light during seventy seconds; eclipse or obscurity during sixteen seconds; increased and brilliant flash, diminishing until it disappears, twelve seconds; another eclipse twenty-two seconds. Total period, one hundred and twenty seconds. It was resolved on in 1838, and has been in operation since February 15, 1852.

SALINAS BAY.—Coming from the East, Point Atalaia appears to be the end of the coast; but on approaching its meridian you soon discover other land from which the point projects. This is the bottom of Salinas Bay, having at the base a long beach of sand, and some white downs, rather elevated. You will soon see the village of Salinas upon a wooded plain. You will at first only see the church, standing out white on the lands of the second range of hills, but when you are about 6 miles North of the village you can distinguish the red colour of the roofs.

The level land upon which Salinas stands falls gradually to the West, where it terminates in a clump of high trees, which serves to crown it. The land of the second range continues to run to the S.W., more elevated than those preceding to the East; and those which follow to the West form, with Point Atalaia, a point of recognition which cannot fail of being remarked.

To the N. by W. ½ W. of the village is the centre of a shoal, upon which there are but 4 to 4½ fathoms. It is 2¼ miles long from S.S.W. to N.N.E., and 1¾ miles from E. to W. It leaves between it and the land a channel of 2½ miles, in one part of which there is muddy bottom. Some persons have assured us that they have found less than 3 fathoms water on it, but we have never found less than 4. Salinas is the pilot station.

SALINAS BAY to POINT TIGIOCA.—Salinas Bay is bounded on the West by the *Island of Praia Grande*, which separates it from that of Maracuno. This island is remarkable by a very high tree, which crowns it like a tower, and by a sandy beach at its N.E. point. The great bank off the coast, which is close-to at Point Atalaia, commences at the meridian of Salinas to run rapidly to the North to within 2½ miles of the East point of Praia Grande; there it takes a direction parallel with the North coast of the island, and then runs again to the N.W. to 4 miles from the West point of the same island.

You will soon see *Point Marapani*, the western end of *Maracuno Bay*. This point is the North point of *Maranduba Island*, and is distinguished by a little hummock, and sandy beaches and downs, which although but slightly elevated are easy to recognize, because it is the only point of the coast between Atalaia and the river Para which has the same aspect. Its recognition is important, because on its meridian is the northernmost point of the bank off the coast. We have seen that it runs to the North from the meridian of the West point of the Island of Praia Grande; thence it runs to the West, turns sharply to the North to 4 miles from Point Marapani, and takes an East and West direction.

---

* I would not advise any one, however, to depend too much upon this reddish tinge for making out the point. The downs of Salinas Falsas, and the sandy coast which precede Salinas Falsas, are better points of recognition.—*M. de Montravel.*

M. de Kerhallet says that the reddish tinge is peculiar to Point Atalaia, although it has been attributed to Cape Carro de Mato:—"I do not deny entirely that the reddish tinge exists, which M. Guéritault assigns to Point Carro di Mato, which he calls Mt. Piraussu, but I have never been near enough to see its whole height, and I can affirm that, at 7 miles off, it does not appear of this colour, and I think it ought not to be approached nearer.

From the meridian of Point Marapani you may see the low point which is the North part of *Cajetuba Island*. This forms, with Maranduba Island, the large *Bay of Piracumbaua*, at the bottom of which you may easily distinguish the outline of the island of the same name.

Then comes the *Bay of Cajetuba*, which divides the island of the name from that of *Curuça*, the West point of which, higher than the land we have seen from Salinas hither, falls sharply to the sea. Particular notice must be taken here of this steepness of Point Curuça, falling abruptly to the water, and not showing any sand at its extremity, to distinguish it well from that of Cajetuba, which is low, and from Tijoca Point, which we shall soon see to the West of Curuça, and which is low, and ends in a large sandy beach. Between these two last points there is a very deep bay, or rather river, bearing the name of *Curuça*. We shall see hereafter how important it is that we should not mistake *Point Curuça* for any other near it.

At nearly 4 miles from the N.E. point of Curuça Island the edge of the bank bends to the W.S.W., and nears the Point Tijoca, which it rounds at a mile distance.

MOUTH OF THE RIVER PARA'.

POINT TIJOCA, in lat. 0° 34′ 0″ S., lon. 47° 51′ 18″ W., forms the eastern point of the estuary of the River Pará, of which the western limit is Cape Magoary, the N.E. point of Marajo Island. This mouth is 33 miles in width, and from the middle of it you cannot see either coast. It is partly filled with shoals, which we will describe before entering the river.

These banks are divided into three principal groups, which I shall designate by the names of the East, the West, and the Central.

The first consists of the Banks of Bragança, Coroa Nova, and Coroa das Gaivotas, without mentioning the great bank along the coast which we have followed as far as Point Tijoca, and which afterwards joins itself to the South of that point to the Bank of Gaivotas.

BRAGANÇA BANK.—The northernmost of the group is that of the Bragança, which it is important to make out clearly, as it lies in the usual passage on entering the river. It is not generally dangerous, because the N.W. face breaks at all times of the tide, although we have sometimes with a calm sea looked in vain for the breakers; but I attribute this extraordinary fact to the circumstance of the sun being about to set, and shedding so strong a light on the water as not to allow anything to be seen in the western quarter. The North extremity of the bank is 7⅔ miles N. by W. from Point Tijoca; its S.W. point, named Espadarte, is 6½ miles N.W., and its S.E. point at 3¾ miles to the North. It is composed of different shoals, of which three, according to the local seamen, uncover at spring tides. They say also that there is between them some small channels, in which there remains 2 fathoms at low water; but, for the purposes of navigation, we must consider this bank as a continuous flat. It is very steep on the West and South sides, and runs out in a flat to the N.E. and East, on which there is from 5 to 6 fathoms, and the edge on the East side is very abrupt, in fact it drops, in the interval between two casts of the lead from 6 to 12 and 18 fathoms. The Bragança Bank is formed of hard sand, lying, according to the pilots, on a bed of hard mud, and they also say that they do not shift.

COROA NOVA, and CHANNEL DOS POÇOENS.—The Coroa Nova lies to the S.S.W. of the Bragança Bank, and is divided from it by a deep channel of a mile in breadth, which was believed not to be navigable before *La Boulonnaise* explored it. Captain de Montravel has called it the *Channel dos Poçoens*; there is good depth for any ship; and we shall see hereafter the security it affords for entering the river.

The Coroa Nova is a bank of sand of recent formation, and shifting, at least as far as regards its N.E. end. An old negro fisherman, who had lived on the coast for 70 years, told us that its North end formed and disappeared by turns, which we can readily conceive, when we reflect that a current of 5 or 6 miles an hour runs incessantly through the channel into which it extends.

CHANNEL of CASSARD.—The bank which we are going to describe is separated from that of Gaivotas by a channel as wide, but for navigation much less simple and certain than that of dos Poçoens, as I proved by the navigation of the brig *Le Cassard*,* the name of which I have given to the channel.

As will be seen by the chart this channel is tortuous, and has a less depth of water in it than the one I have spoken of above.

Bank das Gaivotas.—This is a large flat of sand, uncovering nearly altogether at low water, and reaching to the coast, from which it is separated by a small channel navigable only for boats.

THE POCO.—Between the Bragança Bank and the lands of Curuça and Tijoca there is a wide and very deep channel called Poço (the Well). The current in it is violent, and up to this time it was considered very dangerous, and infallibly lead to the destruction of vessels driven into it by the currents or by mistake. But now that *La Boulonnaise* has discovered the Channel dos Poçoens, these fears will doubtless cease, and the facility of the route for leaving the river will give confidence to those who use it.

SANTA ROSA and KIRIRI BANKS.—The western group of shoals is a combination of the flats which must be considered as united to Cape Magoari, although, in reality, they are separated from it by a channel: but it is so narrow that it cannot be considered as fit for the purposes of navigation. This collection of dangerous flats, which extend to 14 miles East of Cape Magoari, is known in the vicinity under the collective name of *Santa Rosa*. They are all of sand, and break heavily when there is much sea, but sometimes they do not show.

From the extremity of the Banks of Santa Rosa you can see clearly Point Magoari from the deck of an ordinary vessel. The flood runs to the W.S.W., and the ebb E.N.E.

Among the group the bank of *Coroa Kiriri* is also to be placed, lying W.N.W. ¼ W. from Point Tijoca, and South of the eastern extremity of the Banks of Santa Rosa. This bank, although out of the route of vessels entering or leaving, bounds, to the North, the Bank of Morisoca, of which we shall speak presently. It uncovers, it is said, at low tides, and shows generally at ordinary tides. Anchored off its North point we saw, from the mast-head, Point Magoari in full view; although the horizon was hazy, as it generally is in the dry season.

CENTRAL GROUP: TIJOCA, SAN JOÃO, ADONIS, AND MONJUI BANKS.—At nearly 2½ miles W.N.W. from the S.W. point of the Bragança Bank there will be found the South point of a group of three banks, lying on a line, N.N.E. and S.S.W., which together take the name of the *Bank of Tijoca*. They are designated, in particular, by the names of *Cabeça do Sul*, *do Meio*, and *do Norte* (South, Middle, and North heads).

The first lies N.W. ¼ W. from Point Tijoca, and N. ⅓ W. from the opening between two small low islets which are seen not far distant to the East of last land in sight to the South. There is, it is said, nearly 6 feet water on its highest part, but we did not find less than 2¼ fathoms; but this does not disprove the former statement, as we were interrupted in our soundings by the loss of our last anchor.

The *Cabeça do Meio* lies N.N.E. 2¾ miles from the South Cabeça, and has only 9¾ feet water on it; from its centre Point Tijoca bears S.E. by S. The *Cabeça do Norte* is 1¾ miles N.N.E. of the preceding, and bears N.N.W. ¼ W. from Point Tijoca. It has upon it only 7½ feet at low water. These three banks are separated from each other by channels, which we crossed at all times without finding less than 3¾ fathoms; but I would not advise any but a very small vessel to hazard crossing.

The Cabeças of Tijoca are of hard sand, and not of rocks, as is supposed by some; each of these is not more than half a mile in extent, and they show so little, that it was only after two days' search, with the ship itself and two boats, that we were able to find the southern one. Their edges are very steep-to: between two casts it jumps from 11 to 6 fathoms; the next cast you are on the shoal itself.

When the sea is at all agitated by the wind the currents cause violent overfalls throughout the space occupied by these three little banks, so that it would be thought to be breakers. This effect, taking place upon its margins, indicates their extent; but, as it does not always show in this manner, it is an indication upon which no dependence can be placed.

---

* This 20-gun brig, here spoken of, grounded near this channel in 1837; she cleared, and then immediately dropped anchor in 6 fathoms. She was then carried through the channel by a pilot named Juan, but with great difficulty, and against the advice of the Piloto Mor.—*M. de Kerhallet.*

BANK OF SAN JOA˜O.—To the West, some degrees North, and at 7 miles from the Cabeça do Sul, you meet with a sandbank, on which is found 3½ fathoms water; it is that of San João, which the pilots and others, ignorant of the real situation of the banks, improperly placed to the S.W. of that of Tijoca.

ADONIS BANK.—To the North of San João, at 6½ miles, another steep bank is found, on which there is 2½ and 2¾ fathoms. Its highest part is so narrow, that, in crossing it, you can hardly obtain three or four casts to indicate it. It was without doubt on this bank that the brig *Adonis* touched, and unshipped her rudder, and, as no other bank answers the description, I have given it this name.

Monjui Bank.—To the N.E. ¼ E. of the Adonis Bank there is a bank, which I believe to be the Monjui of the pilots. It extends E.N.E. and W.S.W. for an extent of nearly 5 miles, and a mile broad at its West extremity, diminishing considerably in its Eas part. There are 5 to 3 fathoms on it.

The three shoals of which we have just spoken do not show. Perhaps they are not the only ones contained in the large area which divides the Bank of Tijoca from those of Santa Rosa; but I believe, from the care which was taken in sounding, that there are no others.

The banks we have now described leave between them different passes, which are used for entering, or for leaving the river.

We have already mentioned the Pass of Poçoens, which, so recently explored, is not yet frequented.

The Bank of Bragança is separated from that of Tijoca by a deep channel of 2½ miles broad. It bears the name of the *Channel de Dentro.* It is the only one used for entering the river, and notwithstanding the difficulty of beating through so narrow a passage, it is that preferred by vessels leaving which draw above 15 feet water. The great space which separates the Tijoca Bank from those of Santa Rosa takes the name of the *North* or *Monjui Channel;* it would be much more natural to call it the *Western Channel.* This channel is generally preferred by vessels drawing under 15 feet water. We will now proceed with the coast.

THE COAST BETWEEN POINT TIJOCA AND BELEM OR PARA'.—To the South of Point Tijoca the coast forms a bay, into which debouches the channels or rivers, which cut into numerous islands the land lying to the South of Curuça Bay. This indentation is divided into two parts by the projecting point of *Tapari*, remarkable by three very large trees, which overtop the surrounding vegetation, and almost appear like hummocks. This point forms, in a manner, the eastern side of the mouth of the *River San Gaëtano*, as the Point Taïpu is its western limit. Many secondary streams empty themselves into this channel. From the middle of the Channel de Dentro there will be seen, by the mouth of the River San Gaëtano, the two small isles *Rasa* and *Ratos*, which will serve presently as a point of recognizance for the Cabeça do Sul of the Tijoca Bank.

The GAIVOTAS BANK extends to Point Taïpu; its South part is also called *Coroa de San Gaëtanò*, a name which the pilots sometimes give to the Islands Ratos and Rasa.

The lands off *Point Taïpu* are visible when you are abreast of the North breaker of Bragança: they then seem like a low island; but, as you approach them, they join the coast, and then you see them run off to the S.S.W., having at a distance the appearance of two elevated ridges.

You will soon see, to the South of these ridges, a large tree, resembling a tower, which rises near to the North point of the *Furo de Bareta.* This tree it is important to make out, if you wish to enter the pass which leads into the river of Vigia.

Then comes *Cape Carmo*, which appears to rise into a peak, but which the trees, having their basis in the water, alone cause this appearance.

The *River de Vigia* has its mouth closed in a great measure by the bank called *Coroa do Correio*, which extends from Cape Carmo to the bearing of S.E. and N.W. of the large tree which we mentioned above, at the mouth of the *River Bareta.* It follows the coast at half a mile off, leaving a channel of that width at its North end, but which contracts, at the entrance of the river, to about 10 cables' length in width.

The Coroa do Correio dries in some parts at spring tides; it is of hard sand, and the sea breaks heavily on it sometimes. It will be seen, however, that it is not to be feared so long as you do not pass to the East of the meridian of Cape Carmo.

COLARES.—This last cape is the N.W. point of the Island of Colares, on which you will soon perceive the village of the same name, situated above a sandy beach, and is sheltered from the sea by a line of rocks which, being quite uncovered at half tide, form a causeway at 1⅓ miles from the shore. The land is more elevated than that which has preceded, and the coast runs to the South from the point contiguous to the village, as far as Point Cocal, where it turns sharply to the East. On this portion of the coast are several patches of rocks.

BAHIA DO SOL.—Point Cocal forms the North extreme of a wide and deep bay, called Bay do Sol, into which runs, on the North, the river or Furo de Vigia; and to the South, that of San Antonio. It is partly filled with a large flat of sand, which dries in places, and runs North and South from Point Govares to within half a mile of the South side of the bay. When you have passed the parallel of the village of Colares, you will see the South side of the Bay do Sol, which terminates sharply to the East at a right angle, and to the West by *Point Marau.*

POMBAS ISLET.—At nearly halfway between these two points you will see, upon the coast, a round and wooded islet, which, for a long time, appears to be part of the surrounding land. This is Pombas Isle. Against it there lies a rocky flat, which extends to nearly a mile North from it, and runs along the coast as far as the East point. This rocky shoal is separated from the sandbank, previously mentioned, by a narrow channel, which leads to the bottom of the bay. The sea is sometimes very heavy, more particularly with the flood tide, in the mouth of the Bay do Sol.

COAST OF MARAJO ISLAND.—From Cape Majoari the coast of Marajo, washed by the river Pará, runs nearly North and South, as far as the parallel of Cape Carmo. Low, and covered with trees, it presents the mouths of a great number of rivers, of which the principal is that called *Igarapé Grande.* Its breadth is nearly a mile, and it is affirmed that it is navigable for a great distance in the interior. Nearly all these rivers communicate, either directly or indirectly, with the lagoons which occupy a portion of Marajo Island, and for the most part they are navigable for boats.

At 1¼ miles South of the parallel of Cape Carmo you will see the *village of Joannes,* which name is sometimes applied to the island. Here the coast turns sensibly to the S.S.W., but does not change in appearance.

At nearly 5 miles South of Joannes is the *village of Monsarras,* and 5 miles still farther, and close to the coast, is a low island, known by the name of the *Ilha da Coroa Grande,* lying upon the parallel of Point Cocal.

At this little island commences a great bank of sand, which partly dries, and which, turning to the South at the distance of 2½ miles, extends to the N.E. ¼ N. in a sweep to 6 miles from the coast of Marajo. Here it bends rapidly to the West, leaving between its East point and the South end of the bank of Coroa Secca, lying to the N.E., a very deep channel, 2 miles wide.

COROA SECCA.—The bank of Coroa Secca is 5 miles long from North to South, and nearly 2 miles from East to West. On its South point there was, in 1839, a tuft of trees, which served as a beacon, but since that time they have disappeared, being carried away by the currents, so that it is now only shown by the breakers. The two last banks are very steep on their South and East faces.

COROA MORISOCA.—At 6 miles N. ½ W. from the North point of the Coroa Secca, and 4 miles from the coast of Marajo, you find the South point of the Morisoca Bank, which, taking a curve towards the West, extends as far as the Coroa Kiriri, thus extending 34¼ miles in a N.E. by N. direction. The Coroa Morisoca dries in many parts of its extent, and has between these higher portions some channels, through which the boats of the country pass, but they are shallow and uncertain.

The South point of Morisoca is divided from the Coroa Secca by an excellent channel, and very deep in its southern part; and the depth of which decreases rapidly from 5½ to 3 fathoms in its North part. This is the channel most generally used by the boats proceeding to the West coast of Marajo.

Thus it is shown that this latter coast, from the parallel of Pombas Island to Cape *Magoari,* is fronted by a line of banks, leaving between them some navigable passes.

They are again divided by a wide and deep channel, which possesses, doubtless, good anchorages, if vessels should be called hither by commerce.

EASTERN SIDE CONTINUED.—Pombas Island and Point Marrau have been described. At half a mile from this lies the little Island of Guaribos, which is low and covered with some bushes. Its shores and the narrow channel separating it from the coast are clear.

The coast runs 5 miles to the S.W. to *Point Chapeo Virado*, where it turns sharply to South, as far as *Point Musqueiro*, where it runs E.S.E., forming, with *Barreiras Isle* farther to the South, the *Bay of San Antonio.*

Between Point Marrau and Point Chapeo Virado you will find at a mile from shore several rocky shoals, which cover at high water, and send out a spit under water which extends to the meridian of Chapeo Virado. This shoal is dangerous, and must be carefully avoided.

In front of San Antonio Bay, and S.W. by W. from Point Musqueiro, there is a small wooded island, rocky on its North side and sandy on its South, called *Tatuoca;* it is the advanced guard to the North of a group of islands which lie along the coast to the South as far as the city of Belem. From this island there runs to the northward, for the distance of 1¼ miles, a rocky bank of unequal depth, and having some heads uncovered at low water.

JETUBA ISLAND, which follows immediately to the South, has also a bank running to the North for 1½ miles; it is of hard sand, and dries at spring tides.

The Bay of San Antonio is formed of a bank of mud, which extends from Point Musqueiro to that which terminates Barreiras Island on the South, and which is divided from Point Pinheiro by the River Magoari. From this point the coast runs directly South to the city of Belem. At 2 cables' length W.S.W. of the chapel of Pinheiro is a rock of small extent, on which there is but 10¾ feet at low water.

The navigable part of the channel is contracted on one side by the mud bank which runs from the S.E. point of Ilha Nova, and extends 3 miles North of it; and, on the other, by a rocky point, extending 2 cables' lengths outside the ground, near to the extremity of which there is a circular fort, called *Forte da Barra.* To the North of the fort, 2 cables' distant, is an isolated and sunken rock, which requires attention in passing.

After having passed the Forte da Barra the channel widens, and the small islands which have followed it are replaced by a single one called *Ilha das Onças*, the shores of which are parallel with those of the continent, from which it is 2 miles distant. But this width is only in appearance; for the channel is divided into two parts, each of less than a mile in width, by a mud bank, which springs from *Ilha do Fortin*, and extends to abreast of the South part of the city.

Some time after having passed Point Pinheiro you may see, on the horizon, the principal church towers which crown the city, and other buildings will soon rise into view; and then the North part of the city will be seen at the bottom of the bay, on the South part of which it stands.

The anchorage is in front of the city, between it and the bank which lies in the middle of the channel.

PARA', or the CITY of BELEM, is situated on an elevated point of land, on the south-eastern bank of the Pará river, and 80 miles from the ocean. From the sea it has a very striking and pleasing appearance. The anchorage is good and safe, within an abrupt curve in the channel, which admits vessels of a large draft. The island of Marajo is 20 miles distant, but invisible, from smaller islands intervening.

Pará, like most Brasilian towns, exhibits whitened walls and red tiled roofs: it is regularly laid out; and has public squares, called the Palace place, the Quartel, and the Largo de Polvora, and several smaller squares in front of the cathedral, and of several of the convents. The streets are neither well paved nor wide. There are many large well-built houses, but the back streets consist chiefly of wretched small dwellings.

The best houses are well adapted to the climate, with a wide veranda often extending around the outside of the building; and another, along at least three sides of a large interior area. A part of the inner veranda, or a room connected with it, serves as an airy and pleasant eating room. The front rooms only are ceiled, except in the best houses. Latticed windows are more common than glass; but occasionally some houses have both; preference is always given to lattices in the dry season. Instead of alcoves and beds for sleeping, hammocks swing across the corners of all the large rooms, and along the verandas. Some houses have hooks for swinging hammocks for fifty or sixty persons every night.

The insurrection of 1835 was greatly injurious to Pará. In almost every street there are houses still battered with bullets or cannon shot. Some have been repaired, others abandoned.

Pará fronts the river, and in its rear there is a beautiful shaded walk. The Estrada das Mangabeiras extends from near the marine arsenal, on the river side, to the Largo da Polvora on the eastern extremity of the city. It is intersected by avenues leading from the Palace Square and the Largo do Quartel. Its name is derived from the mangabeira trees, with which it is densely shaded on either side. In the immediate vicinity of this road is the old convent, now hospital, of San Jozé, and near by it the *recolhimento* of orphan girls.

There are a few private gardens in the vicinity, but neglect of improvement has followed disorders that have for many years prevailed in this town; many streets are overgrown with thick bushes. In the suburbs are forsaken tenements, and the walls of large houses. Beyond the actual precincts of the city a dense forest commences.

Mr. Kidder says, "Nearly all the revolutions that have occurred at Pará are directly or indirectly traceable to the spirit of revenge with which the bloody expeditions of the early slave hunters are associated in the minds of the natives and mixed bloods throughout the country."

At Pará, as well as at all other Brasil ports, ships arriving even in ballast (either from foreign or coasting) are required to produce a sealed manifest, under a penalty of 500 milreis, equal to £50 sterling; in the first instance from the Brasilian consul, in the second from the customhouse at the port of departure. I unwittingly incurred this penalty, but through the influence of my consignee, it was mitigated to 100 milreis, equal to £10. As this fact is not generally known to masters and brokers connected with the trade, the knowledge of it cannot be too widely disseminated.

No vessel meeting with an accident should, if avoidable, bear up for Pará, as a refitting port, the common articles of ship chandlery being barely procurable; Maranham or the West Indies are much to be preferred.

The cathedral of Pará, said by Mr. Kidder to be the largest religious edifice in the empire, was commenced in 1720, and completed and consecrated in 1775 by a bishop, attended by the monks, magnates, and people. Like most of the other churches it is built in the form of a cross.

The *population* of the Comarca of Pará, or Belem, in thirty-two villas, seventeen hamlets, and five missionary stations, is stated by Baena, in 1839, as follows:—Free people, 90,767; slaves, 26,961=117,728. Comarca of the great Island of Joanés Marajos, in five villas and six hamlets:—free people, 10,689; slaves, 2,040=12,739. In the Comarca of the Rio Negro, in nine villas and thirty-eight hamlets:—free people, 17,881; slaves, 962=18,843. Total of settled inhabitants in 1839, 149,854.

DESCRIPTION, by Mr. Webster.—The great Island Marajo, which lies between the Rio Pará and the main stream of the Marañon or Amazon river, is a low, flat, alluvial land, covered with brushwood and grass, and abounding in cattle. This luxuriant island supplies Pará with cattle and horses. In the rainy season it is much flooded, and is peculiarly unhealthy when the waters have quitted it, and the sun begins to exhale the malaria. At this time remittent fevers prevail. It is overrun with alligators, snakes, and wild beasts.

The entrance of the Pará is about 25 miles broad. The land on every side of the river is low; but the eastern shore displays a boundless continuity of shade, and one uninterrupted scene of forest green skirting the water's edge, and extending with one level surface to the horizon. The water is extremely muddy, but tranquil, and without the heavy swell of the ocean.

The banks of the river are exceedingly muddy, affording but little facility for landing; and where they do allow of it, houses are generally erected. On the water are seen many thatched and cabined canoes of the country, and small river craft with lofty spindle masts and thin cotton sails, having some resemblance to Chinese vessels. It is not unusual to see them with a large mat, or a bush with all its leaves, to answer the purpose of a sail, in these canoes. The principal business of the river seems to be carried on in these canoes, which are continually arriving and sailing, and literally crowd the shore near the town. They bring the produce of the country from all parts, and come down the river from a distance of 600 and 700 miles. They are navigated by various native tribes, each canoe generally containing a whole family or more of people.

Captain Montravel says, "Although this port, the only one in this province, is open to foreign vessels, and frequented by a very considerable number, it offers very few maritime resources. At the same time few ports require more to be provided with cordage, anchors, cables, and chains, which are so quickly destroyed in this climate, and which are so frequently lost.

"Provisions, also, are procured with difficulty, and are of bad quality. The water of the river, good during a portion of the year, becomes unwholesome and dangerous during the months of July, August, and September. Ships are then obliged to provide themselves with this necessary element, by their own means, with infinite trouble and loss of time, by artificial wells, dry at half tide, in the beach of San Antonio, and destroyed by the following tide. Vessels there should not reckon, but with great reserve, upon the resources of this port."

SAILING DIRECTIONS FOR PARA'.

MARANHAM TO PARA'.—In proceeding from Itacolomi, whether to the North or to Pará, the route is the same to the Isles of St. João. Being 12 miles from Itacolomi you will run N.N.W., and until you come to the meridian of Point Atins you will find deep water. The limit of 8 fathoms will be attained on this parallel: you must always keep in a greater depth than this, and you will have nothing to fear; if you find less, you must bear off from the coast.

It must not be forgotten that the flood tide runs W.S.W. at 2½ miles at spring, or 2 miles at ordinary tides, and at a greater rate nearer the shore; the ebb runs to N.E. at the same rate. Should you be becalmed you must not drift by the flood into less than 6 fathoms; if so, you must anchor. On the track here stated you will constantly find the bottom of white sand.

Having run 60 miles on this direction you will be 14 miles off, and on the parallel of the Isles of San João; as you approach them the quality of the bottom changes to yellow sand, mixed with red specks.

If it is during daylight, you will have seen the Islands of San João, the largest of which appears as a white triangle, fronted by small hummocks covered with vegetation, which, at a distance, seem like islands before the sand. They cannot be mistaken for any other part of the coast; and, having made them, you have nothing to fear from the Bank of Manoel Luiz, and can bear to the N.N.W., if going northward, or W.N.W., if to Pará.

If, after running 60 miles N.N.W. from Itacolomi, the land is not visible, either on account of night or haze, you will know that you are on the flat of San João if, having 8 fathoms, you have yellow sand. Continuing the route you will have crossed the flat, when you find a sudden increase of depth from 8 to 16 and 18 fathoms; and a change in the quality of the soundings, which become grey sand, with black specks, and sometimes mixed with broken shells.* Having arrived on this edge you can run N.N.W. without danger; and, if bound to Pará, for the sake of security run some miles further N.N.W.: then bear round W.N.W.; and, if it is night, keep between the depths of 10 and 13 fathoms; but, by day, you can approach the coast, and keep it in sight in 8 fathoms. To this depth the soundings decrease regularly, but below this they are irregular.

By daylight, in crossing the Bay of Pirucaua in 8 and 10 fathoms, you may see the Morro Pirucaua, and, keeping on in the same depth, you will cross the Bay of Pria, which may be known by the Sumacas Islands, if you cannot see the three hills at the bottom of Gurupi Bay. Between the San João Islands and Cape Gurupi the bottom is always of grey sand, with black specks; but on the meridian of this cape you will find the bottom of very fine black sand, the only bottom of the kind on the coast, and which serves the pilots to fix their longitude. Very soon after the bottom again becomes grey sand and black specks.

---

* Lieutenant de Kerhallet says: "Black gravel, mixed with small shells, the only soundings of the sort on the coast," p. 18.

Having again certified your situation, you keep on in the same bearing and depth till you make the northernmost island of the Caïte group, previously described, and may be known by that description. The lead will also indicate the meridian of Caïte Bay; for, across the bay, the bottom is grey sand and broken shells; sometimes the lead only shows the prints of large shells, of which the bottom is full. Across the middle of the bay is a line of mud, lying S.S.W. and N.N.E. You ought to keep in 10 fathoms here, which will be 8 miles off the coast.

The bearing of W. ½ N. will then bring you up to Point Carro do Mato; then the sandy downs of Salinas Falsas Bay; and, at last, Point Atalaia, which you may approach without danger, so that you keep in 8 fathoms and 3 miles off.

The tides in all this coast are felt at 20 miles off; near the land, where they are strongest, the flood runs into the bays, that is, to S.S.W., at the rate of 1½ and 2 miles; the ebb to E.N.E. at three-quarters to 1 mile an hour.

POINT ATALAIA TO PARA'.—When you have well made out Point Atalaia (now distinguished by the lighthouse), you may approach it within less than 3 miles, and more than 2 miles, if you pass within the sandbank lying N.N.W. of the point. You will have made out Salinas before reaching the meridian of Point Atalaia. If you mean to go outside this flat, as is most prudent for a large vessel to do, you must not come nearer than within 6 miles of the point, and than in 11 fathoms.

A vessel wanting a pilot for the river can cast anchor in the muddy channel inside the shoal, having Point Atalaia bearing S.S.E. ½ E., and the village S.S.W. ½ W., where you have less chance of losing your anchor than outside in 11 fathoms.

I would advise every vessel to wait for the pilot under sail, whichever way the wind may be; you can always keep the village in sight, by tacking so as to neutralize the effect of the currents, which you can also do under shortened sail.*

The pilot signals, as published by authority, in February, 1843, are as follow:—†

1st. Every vessel arriving off Salinas, either foreign or native, will hoist a *red flag*, on any part of the rigging, so that it may be seen from the land, with the exception of the peak or the gaft end of the mizen.

2nd. At Salinas, or the pilot station, there will always be hoisted, during the day, a *white flag*, which only serves to indicate the residence of the pilots there.

3rd. The same white flag, accompanied by a *red* one, with a white square in the middle, hoisted on either the right or left side, is to say that there is a pilot on the station, and that he has a boat.

4th. After this signal there will follow the one to indicate to the vessel the time the pilot can go off, and for this reason the persons on board ought to pay the greatest attention; therefore, if from the shore a white *burgee* (or *pendant*) *with red cross* is hoisted, it is to indicate that the vessel must await the pilot, who will go off immediately; but if, instead of the white pendant with red cross, a *red one* be hoisted, it is to inform the vessel that it is not a proper time to go off, but that the vessel must be kept under easy sail, or lay-to at sea with the ebb, and inshore with the floodtide, so as to be near the shore at high water, which the masters must bear in mind takes place at 1ʰ 30′ or 2ʰ at new moon, and at full; inshore at 7ʰ 30′ to 8ʰ a.m., and at 7ʰ 30′ to 8ʰ p.m.; at the quarters of the moon, at 12ʰ to 12ʰ 30′ in the day, and the same at night; and it is only at high water that the pilot can go off.

5th. If the signals are made before midday, and if, after the signal for waiting is made, *two pendants* are hoisted, red above and white with red cross below, it is to inform the vessel that the pilot will go off before 12ʰ. If the white pendant with red cross is above and the red underneath, he can go off only after 12ʰ.

6th. If the signals are made in the afternoon, the red flag intimates that the pilot will go off before midnight; if the white flag with red cross is hoisted, after midnight, Respecting the fires that were lit at night to indicate that there was a pilot but no boat, and that there was neither, this practice is annulled, in consequence of the vessel that is now getting ready, and to be constantly kept at the orders of the pilots at Salinas.

---

* If it is necessary to send a boat ashore for the pilot, it should leave the ship so as to be at the mouth of the little river, on the West of which stands the village of Salinas, with two-thirds of the flood. The sea breaks heavily on the bar, and there is great danger in attempting it at any other time of the tide; she should not attempt to leave after the first third of the ebb tide.

† *In the Nautical Magazine* these are erroneously given as Directions for Maranham.

After having embarked the pilot, if you are in less than 11 fathoms, keep to the N.W. until you are in this depth, and keep so by going W. by N., which will carry you along the coast 5 miles off, as far as Point Cajetuba; when the land bears away to the South. On this bank there is nothing to fear as far as the meridian of *Point Curuça*, the importance of which we have previously shown.

ROUTES FOR ENTERING THE RIVER BY THE PASSAGE DE DENTRO.

1st. *When the breakers on the Bragança Bank are seen.* Having arrived in the meridian of Point Curuça, and only then, you will see to the W.S.W. ½ W. the breakers on the Bragança Bank, 7 miles off. A bearing taken now of the East point of Cajetuba, and of the West point of Tijoca, which you will see to the S.W. ½ S., with its characteristic sands, will fix the position of the vessel, and also show the previous effect of currents. If your course hitherto has been with a proper allowance for them, you may safely continue it, without danger from the flat extending E.N.E. from the Bragança, until you bring the sandy point of Tijoca to the S. ½ E. Then follow round the breakers, leaving them a mile eastward, until you bring the southernmost (called Espadarte), on with Point Tijoca, bearing S.E. Then place the vessel's head to S.W. ½ S., and this will carry you in 12 and 10 fathoms in the channel to 10, 7, and 6 fathoms.

2nd. *When the Bragança Bank does not show.* If you cannot make out the breakers on this bank, either because of a calm sea, or the tide too high, or that the sun is too low in the West,* then the bearings taken of Point Curuça, as first mentioned, become the first point of departure, and you must steer as before stated. If the bearings place you 8 miles from the point, you will pass on in 13 fathoms, which at some casts decreases to 10 and 9, and then falls again to 13 fathoms.

If before bringing Point Tijoca to bear South, you find less than 8 fathoms, you are too near the N.E. side of the Bragança, and you must bear away to the North, and keep on the required route until the point is to the South. Then you ought to mark the West face of the bank, and steer S.W. ½ W. with the ebb, and S.W. with the flood tide, to pass at the same distance as we have stated previously. It will perhaps be more prudent to run to the West after being on the meridian of Point Tijoca, until it bears S. by E., when you will have 12 and 13 fathoms. Then steer S.S.W. ¾ W. with the ebb, and S.S.W. ¼ W. with the flood, in 11¼ to 13 fathoms, until Point Tijoca bears S.E. But if you find less than 9 fathoms, the lands of Tijoca being distant, and the islets Rasa and Ratos out of sight, it will show that you are too near the Tijoca Bank. If the islets Rasa and Ratos are open only a sail's breadth, and you find less than 9 fathoms, open your eyes and bear quickly to the South, for you will be on the edge of Cabeça do Sol of the Tijoca Bank.

If the islets are well open, and bearing to the W. of S., and at the same time the land of Tijoca is very distinct, and the depth diminishing, you will be too near the Bragança, and you must bear to the westward. These directions are doubtless minute, but they will prove useful in case the breakers on Bragança do not show, which is exceedingly seldom, or when the pilots, which is too often the case, are ignorant and incapable. It is not advisable to enter the channel during the night and in a calm. It will be better to anchor before reaching it, although you have the chance of losing your anchor, where they sometimes break like glass, without any possibility of assigning a cause. You ought therefore to cast anchor here, and in all parts of the river, most carefully and not quickly, and only veer out the cable as necessary.

It is high water (establishment of the port) in the Channel de Dentro at 10^h 51′ in the western part, and the rise is 9¾ feet. The flood runs to S.W. ¼ S. 2½ miles to 3½ miles. The ebb runs to the N.E. with the same mean rate. The bottom throughout is fine gray sand.

The CHANNEL DOS POCOENS.—If by any cause you should be driven into the Poço, lying between the Bragança Bank and the lands of Curuça and Tijoca, you may proceed without fear as follows:—

---

* If the sun is low in the West, and its rays prevent these breakers from being seen, the coloured glasses of the sextant may be used to make out the passage.—M. Arnous Dessaulsays.

If you have entered the Poço with the flood, it is most likely that you are nearer the Bragança than the coast, which a bearing will quickly decide. You must then get nearer the land, where there is less depth, the currents weaker, and the sea quieter than in the West part of the Poço; you can approach it without danger to within 2 miles in 7 fathoms. Being in this depth, and as near as possible in the line with Point Tijoca bearing S.E., you must anchor and await the ebb until next day, if the next ebb tide occurs after three hours after noon, that is to say, with the sun at a less elevation than 45° in the West. You may leave, however, with the next ebb, if you wish to enter the Pass de Dentro by the North, when you may beat out of the channel, preferring the eastern part of it. Point Tijoca bearing S. ¾ W. marks the East limits of the N.E. side of the Bragança Bank.

If you intend entering the Channel de Dentro by the Channel dos Poçoens you must get under way when the sea permits, and get on the bearing of Point Tijoca to the S.E., and then run N.W. more to the North or West, according as you were to the South or North of the bearing given from Point Tijoca, but preferring to keep to northward.

You will soon see, particularly with the ebb, the breakers on the Espadarte of the Bragança, which you must pass at half a mile or more. When they bear North, then steer W.S.W., and then you will be on the route stated above for going through the Dentro Channel, when you bring Point Taipu to bear South, *true*.

In the Poço the current of the flood runs S.W., with a rate of 2½ miles in common, and 3½ to 4 miles in spring tides; the ebb in the opposite direction at the same rate. It will be understood that, with such currents, you ought not to venture in this passage but with a fresh breeze and settled weather.

Let us now return to our route in the river. As we have said, we have placed the vessel's head to the S.W. ½ S., when the Espadarte is on with Point Tijoca, bearing S.E. We shall have in this track 12 and 11 fathoms in the channel, to 10, 7, and 6 fathoms. You must always keep in 6 and 7 fathoms until Point Carmo bears East, 3½ miles off. Then steer S.S.W. ½ W. as far as the parallel of Point Cocal, whence proceed so as to pass 1½ miles West of Guaribas Islet. If before you reach the parallel of Pombas Isle the depth should exceed 8 fathoms, you are too far to the West, and must bear to port, for fear of being carried too near the Morisoca and Croa Secca Banks.

South of Pombas Island the depth increases to 9 and 11 fathoms, as far as the parallel of Guaribas Island, where it varies between 13 and 16 fathoms, rocky bottom, to that of Point Chapeo Virado, when it again becomes 9 and 11 fathoms, as far as Point Musqueiro.

When, on this track you have brought Guaribas Island to bear N.E. by E., and Point Musqueiro S. by E. ¼ E., you will have passed the rocky flat, the end of which lies to the North of Point Chapeo Virado, You must then steer so as to range a mile or more around Point Musqueiro, whence you may run for Point Pinheiro, which you will see to the South, taking into account the effect of the wind and the flood tide, which bears upon the islands to leeward. You must pass nearly half a mile from Point Pinheiro, to avoid a rock which lies 2 cables' lengths W.S.W. of it, and when you have doubled it, you must run along the coast until you see, through the cut to the South of the Island Paqueta Mirim, the islet which is to the North of Arapiranga, on which line lies the North extremity of the bank which extends to the North of Ilha Nova. Then steer so as to pass a short distance from the Forte da Barra, which you must not near on the North, on account of a rock lying a cable's length off in that direction.

From the Forte da Barra proceed toward the city, but do not bring the cathedral and fort in a line, on account of two banks on this bearing abreast of Val de Caens. You ought also, if the breeze is slight, to guard against the stream of flood which runs rapidly to the S.W., between the house at the mouth of the river Una and the point of the city. The bearing used by the pilots to show the edge of the bank extending from the anchorage to Fortin Island is the West angle of the hospital (a white house, standing on the West point of the city), on with the church of Carmes, in the S.W. of the city. You will anchor in 3½ fathoms, between the church of San Antonio, at the North end of the city, and that of Merces, lying in the centre.

DIRECTIONS FOR LEAVING THE RIVER.—It is a custom among vessels here, by the advice of the pilots, to quit the river only at the moon's quarters. The only plausible reason that can be given for this is that you can leave in the morning, that is, *before the sea* breeze sets in; but I would rather have, for the first tide, the advantage *of the greater strength of* the current than a favourable wind, which is less important.

Therefore the age of the moon appears to me to be indifferent, and I would advise the abandonment of this prejudice.

You must be ready at high water, and tack down as far as the Bar Fort in the channel limited on the East by the cathedral and fort in one, and on the West by the hospital and the Carmes church (as described for entering), that is, in 4½ fathoms if it is a large vessel, and in 3¼ fathoms if of light draught. When you have passed to the northward of the bank of Ilha Nova, that is, when the islet North of Arapiranga is seen through the cut, you push your boards as far towards the islands as in 4¼ and 5 fathoms. By tacking thus during the whole ebb tide you will most likely reach Point Musqueiro before the flood, or at least some point South of San Antonio Bay. If you find that you cannot, before the end of the ebb, reach the parallel of Pombas Island, you should not try to pass Point Musqueiro, as you would be obliged to anchor in deep water and rocky bottom, and be exposed to the full force of the flood tide.

The second tide being in the night, you must proceed with caution in the channel between the Musqueiro coast and Tatuoca Island, and the rocky bank North of this island. When you are North of Point Musqueiro you are beyond the limits of this latter, and can lengthen your tacks to West through the successive depths of 11½, 12¼, and 15 fathoms, where they drop to 11 fathoms. Then proceed on the starboard tack as far as 9 fathoms. Going thus you will near the Croa Secca, but as the lead will not sufficiently indicate this, you must be careful in the night to West. By day, while to the South of Point Marrau, the meridian of the West side of Goujetuba Island ought to be your western limit, and to the North of the same, and South of Point Cocal, you should not bring Point Chapeo Virado to the East of South. The lead will be sufficient guide to eastward.

The currents are weaker towards the shore, which therefore ought to be avoided.

The second tide will carry you probably to somewhere between Colares and Cape Carmo. The best anchorage will be East of Point Cocal in 5 and 6 fathoms, or between Carmo and the ledge of rocks of Colares, as near the land as possible, in muddy bottom. The pilots are accustomed to anchor in the middle of the river; but it is much better as near as possible to the land, where you avoid the force of the currents.

The third ebb will most likely take you as far as the point of departure for the entrances, of which we have previously spoken, on the entering of the river. Your tacks during this tide must be guided by the lead and the distance of the land, except on the edge of the Correio Bank. As long as the islet Caramoju, in the mouth of the river De Vigia, is covered by Point Arequesaoão, you will keep clear of it by not passing the meridian of Cape Carmo. As soon as the islet is open to the point, the edge of the bank will be with Cape Carmo S.W. by S. ¼ S., which bearings you must not pass. The western limits are the soundings and the seeing the land, which you must not lose sight of.

With Point Taipu bearing S.E. by S. 4 miles, you will be in a good situation for passing the entrances, of which you have the choice of that of the Dentro, and that beween the Tijoca Bank and the Santa Rosa Bank, through the central shoals.

The first is preferred by vessels drawing above 16 feet, and the other by those of less draught.

Leaving by the Dentro Channel.—You must wait for daylight, and get ready by the time of high water, and then run to N.W., but not so far as to lose sight of the land of Tijoca; then veer to East, the limit of which tack will be North and South of Point Taipu, so long as Point Tijoca bears South of S. by E., or better still, while the islets Ratos and Rasa are not open of each other. In the second tack to N.W. you must not pass to North of the parallel of the Espadarte shoals, or Point Tijoca, bearing S.E. by E. ½ E. On the next tack to East you will most likely double the extreme of the Coroa Nova, and you may then run to the meridian of the Ratos and Rasa. The third tack to N.W. must be limited to 7 fathoms, and Espadarte bearing East, *true*. North of this last bearing you must shorten your tacks to the N.W., and go not beyond 7 fathoms and eastward to half a mile from the Bragança breakers.

The most dangerous point in this passage is the Cabeça do Sul de Tijoca, which lies, as before stated, with Rasa and Ratos open a sail's breadth, and Point Tijoca bearing S.E. ½ E.; these two bearings should never be brought on at one time; tacking as we have stated you will get out, if not easily, without danger.

You may also leave the river by the *Channel dos Poçoens*. After having brought the

Espadarte on with Point Tijoca, and the wind will allow you to follow this bearing of S.E., you may enter the channel, ranging round the Espadarte, and steer S.E., having passed it. Run the East board to near the bank off the coast, and then tack in the Poço, preferring to beat in the East part of the channel. This new passage is shorter and more easy than the Dentro, but it requires a good wind, which will allow the head to stand S.E. It is excellently adapted for steam vessels bound eastward.

Leaving by the Western Passage, called the North Channel.—This channel, taken by vessels drawing under 16 feet, has no danger for such throughout, except the Adonis Bank, in its western part.

Leaving the anchorage of Taipu at the end of the flood, you steer N. by W., the ebb running N.E., two knots will make your course North, and on this you have nothing to fear from the Adonis. If you find (out of sight of land), having had 5 to 8 fathoms, a depth of 3½ fathoms, you have come on the Monjui Bank, when you must go more to the West and reach 5 and 8 fathoms. If the wind does not allow you to stand N. by W. you may come upon the San João Baak, on which there is never less than 3½ fathoms, and therefore not dangerous.

The navigation of this part of the entrance, with a strong beating wind, cannot be guided by any positive indications, if you are out of sight of land, and the lead will not tell the proximity of any of the banks you wish to avoid; but by keeping in the eastern part of it, to the East of the bearing of Taipu to S. ½ W., you have nothing to fear. If, with Cape Magoari in sight from the mast-head, you find soundings of 3 fathoms, you are on the Adonis Bank, and you must then take a short tack to East. If it is in sight from the deck, and less than 5½ fathoms, you must bear to the eastward. In general you will be too near the Santa Rosa Banks, if you can distinctly see Cape Magoari.

The Monjui Bank is readily known by the rapid diminution of the depth, and when you find the soundings increase on the North side you are outside the river. As soon as you have reached this the bottom, which hitherto has been of grey sand, becomes of soft mud.

If there is but little wind and the ebb nearly done, it will be prudent to anchor on this muddy bottom, to prevent being carried to West by the flood; but with a fresh breeze you can proceed safely in not less than 7 fathoms.

Remarks and Directions, by Captain the Hon. Wm. Wellesley, 1833.

On proceeding from Maranham *for the coast to the westward*, the courses are North and N. by W., until nearly on the parallel of the Island *St. João*, or *St. John;* thence hauling to the westward, the eastern part may be made. This land may be known by a small white patch of exactly the same colour as the *Lançoes Grandes*. It is very remarkable, for the surrounding country has verdure about it, and the sand is whiter, and has altogether a different appearance. At these Lançoes is a narrow passage between St. João and the main.

On continuing westward you lose sight of the Lançoes, and approach the eastern point of the isle, which is low and sandy. A shoal extends from it, which always breaks. This may be rounded in 9 or 10 fathoms. On approaching it over the sandy ground, a green and wooded point appears, which has a peculiar shape, from the trees at its extremity being withered or stunted. It may seem, at first sight, as if a mist were coming over the land. This should be known, because a certain sight of this point is requisite, in order to take up a good anchorage. It should not be brought to the southward of East, and you should not open a river, the entrance of which is just to the southward of it. But a most preferable anchorage is found by rounding the breakers in 10 fathoms, then anchoring at about a mile from shore, in not less than 8 fathoms, and moderately close to them.

It is to be remembered that navigators who are making the coast, and those who are leaving Maranham for the westward, should take three or four days after the full and change of the moon for the time of starting, as spring tides run very strong, about 4 miles an hour. The *Sapphire* happened to enter the anchorage during their greatest strength, and upon the flood. Many of the shoals show only upon the ebb. The ship was driven upon their edge, and anchored in 7 fathoms, in a position presumed to be safe; but when the tide turned, breakers were discovered within 20 yards, and had not then the wind and tide been favourable, she might not have gotten clear without difficulty. *To anchor at St. João take, if possible, the ebb tide and quartering of the moon.*

At a hut to the southward of St. João dwells a Brasilian, who has the charge of cattle, the proprietor of which lives on the main land. Here fresh beef may be procured in abundance. The best landing is just round the South point. You may also land at Woody Point and cut fuel, but if you remain there during the flood you will hardly pull through the entrance of the river, the tide runs in so violently.

Between St. John's and Salina, a distance of 50 leagues, the land is low.

From off St. John's the *Sapphire* steered N.W. by N. and N.W. until she had passed Cape Guarapi, which lies in lat. 0° 41′. The bay on the West of this cape is said to be not so deep as laid down in the charts, and vessels anchor mostly off the shoals. There are commonly a number of troops at Guarapi, and sometimes a Brazilian man-of-war. According to report, there are diamond mines in the neighbourhood.

A good depth to run along the coast in, well off the land, is from 13 to 15 fathoms. Farther inward the depths decrease very gradually to 12, 11, and 10 fathoms.

POINT ATASIA (*Atalaya Point*) is 25 leagues to the westward of Cape Guarapi. On passing between, Captain Wellesley has said; Until I arrived at *Mount Atasia* the only points I distinctly made out were *Caita*, which is a long, low, green point, and *Mount Pirausou*, which may be known by the red cliffs about it; but you must be pretty close in to make the red out clearly. The directions in an old book say that Mount Atasia has a watchtower upon it, with a gun, which is sometimes fired when a vessel is seen approaching. (This is still there, though its existence has been denied.)

Mount Atasia is rather a high point, with reference to the land around it: there are two or three remarkable patches of land on it; and from the eastward it makes very distinctly; as the point and white patches cannot be mistaken.

SALINAS, or SALINA, the pilots' station, is difficult to make out at 5 or 6 miles from shore; but as you open the land to the westward of Atasia, on looking carefully, a small white house will be discovered, with a red streak behind it. The white house is the chapel, and the red, the tiled roofs of the cottages. It stands upon the ground rather more green than the surrounding country, and makes best on coming more directly from the northward, the whole village presenting a more enlarged appearance. It has now the lighthouse, previously described.

The best anchoring ground off this point is with the village bearing from S. by E. to S.E. by E., in from 7 to 13 fathoms of water. The *Sapphire* anchored with it bearing S. by W. in 7 fathoms, off a spit which runs from Point Atasia; but here the ground was found to be foul.*

In sending a boat ashore, the best passage in is between two breakers, a little to the westward of the village: opposite to it is a very heavy surf.

Captain Courtney, R.N., has represented the bottom, along the whole line of coast, as being composed of quicksands, to which he attributes the frequent loss of anchors. Lieutenant Stopford, who has frequently anchored on all parts of the coast between Maranham and Pará, is, however, of a different opinion, but he admits that the quality of the bottom should always be ascertained before anchoring, because it is foul in many places.

REMARKS MADE BETWEEN MARANHAM AND PARA, BY LIEUTENANT STOPFORD, COMMANDER OF H. M. SCHOONER PICKLE, 1832.

A vessel bound from Maranham to Pará, during the rainy season, should get to the northward of the Equator as soon as possible: for she will thus avoid the light baffling winds and calms which prevail in this season; and also the current which sets from E.N.E. to S.E., about 2 or 3 miles an hour, augmented by the water from the various rivers and bays of the coast.

Westward of the Island of Salina are some white cliffs, so nearly resembling those to the eastward of that island, that they have frequently been mistaken for each other; and some vessels, after mistaking the western cliffs for those eastward of Salina, have stood on until they have been lost on the Braganza Shoal, or in that equally dangerous place called the *Well*, on the East of the Braganza Bank. It is, therefore, indispensably necessary that due precaution be taken for anchoring at Salina. With the town S. by E. you anchor in 9 fathoms.

---

* From 7 fathoms, bad ground, Salina bore S. by W. ¾ W., Macussani, W.S.W., Point Atasia [Atalaya], nearly South. The best anchorage is with the pilots' station S.E. in from 9 to 13 fathoms, and not less than 4 miles from shore.

The whole coast from Turivazo is woody, and the white sandhills are very remarkable.

The *Pickle, when off Salina*, remained at anchor one night, in 7 fathoms, with the town bearing S. by E., and had no difficulty in regaining her anchor in the morning.

Accidents have frequently happened here, and lives have been lost, by boats being swamped in the surf when going for pilots. To attempt landing immediately under the town is very wrong: boats should pass to the westward of the island; for, by entering thus, a river will be seen, which leads up to the town, and there, avoiding the surf outside, they may land in safety.

DIRECTIONS FOR PARA by MR. RICHARD THOMAS, COMMANDER OF THE BRIG MARGARET RICHARDSON, OF GLASGOW.*

When bound to Pará from the northward, vessels should cross the Equator in 46° W.; then steer S.W. until they arrive in 28′ of South latitude: soundings may then be found in 17 and 18 fathoms, fine sand, with small black specks. Steer a West course from thence, keeping the lead going, and do not approach the shore nearer than in 12 fathoms of water. The white sandhills to the westward of the *Bay of Caita* will soon be seen, appearing from the mast-head like breakers, at the foot of high mangrove trees.

The land of Caita must not be approached, for the water is very shallow, and the soundings very irregular off the bay, and the flood tide sets in to the West. By steering a West course, and keeping a good lookout, *Point Atasia* will soon be seen; it being the highest land on the coast from Mount Guarapi, with steep red cliffs at the end, and to the westward of it.

At about 2 miles farther to the westward is the village of *Salina*. The pilot station is situated on a steep cliff, and the houses covered with red tiles. A church, with the steeple, near the middle of the village, may be seen.

Abreast of this point, at the distance of about 2 miles, is a bank of hard sand and stones, with 4½, 5, and 6 fathoms of water; this bank extends to the eastward as far as Caita, and the West end bears South from Salina. Within this bank is a channel with 9, 10, and 11 fathoms of water, soft mud; but, being so near the shore, it is not recommended.

After having reached the pilot station at Salina, should the weather be fine, with light winds, it is advisable to anchor, with the village bearing S.E., and in not less than 9 fathoms of water. For should it come to blow during the night, which is often the case in the rainy season, and a vessel should part her cable, she will have sufficient room to make sail, and stand to the northward under easy sail until morning, and by that means will avoid the reef which lies off the island *Praia Grande*, the island next West of Salina. Should it be blowing strong on arriving off the pilot station, and past noon, the best way may be to lie off and on, under easy sail until next morning, for it would be too late to attempt to run for the banks.

In leaving Point Atasia for the Rio Pará make sail early in the morning, steering W.N.W. ½ W.; keep the lead going, and be very cautious in steering and sounding, as the tides here run very strong, and are very uncertain in their direction, owing to the many small rivers and banks in the vicinity. A vessel should not advance nearer than in 10 or 12 fathoms, until she comes abreast of *Maranduba*, by some called *False Salinas*. The latter is the second island westward of the village Salina, and may be known by two white patches or sandhills, in appearance resembling the sandhills to the eastward, but smaller.† Having passed these sandhills, continue a course toward the *Braganza Banks*, or breakers, still keeping the lead going.

Hence to the Banks, while in the fairway, from 13, 15, and 17 fathoms will be found; and, when the sandhills bear about S.E. by E., the breakers will be seen from the mast-head on the larboard bow. These breakers must be left on the larboard hand, at the distance of about half a mile. The channel here, between the Braganza Banks and Tijoca Shoals on your starboard hand, is not 2 miles wide. Having reached the breakers, the only guide for entering the river, a vessel may steer a little more southerly, keeping the lead going; for she will then have, in mid-channel, 15 fathoms of water, with foul ground. Having advanced well round the breakers the course thence up the river will be S.W. ½ S., keeping the larboard shore on board.

---

* The result of seventeen voyages. Originally given in the *Nautical Magazine*, 1833.

† These two sandhills have, at times, been mistaken by strangers, and have proved fatal to many valuable lives, there being no landing in their vicinity. It was off this place that Captain Mann, of the brig *Warrior*, in 1827, unfortunately lost his mate and three men, by the *swamping of a jolly-boat*, when attempting to reach the shore in search of a pilot.

Directions for making Para', by M. Arnous Dessaulsays, 1822.*

Vessels coming from Europe ought to direct their course so as to cross the Line between 42° 40′ and 44½° W. lon. They can, within these limits, choose their passage, on account of the confidence they may be authorized to have in their position. By reckoning, the easterly point is to be preferred; with chronometers, a more westerly point may be taken. As soon as the Line is crossed, the lat. of 0° 24′, or 0° 30′ S., is to be attained.

Under the Line, between 44° 40′, and 46° 30′ W., the soundings decrease gradually from 70 fathoms to 16 or 13 fathoms.

Under the parallel of 0° 30′ S., between the same longitudes, the depth decreases from 18 to 11 fathoms, and the land ought to be made before the first depth is attained, or at least it is then to be seen. As soon as this is made out you can approach into 7 fathoms; but this is the limit, on account of the numerous shoals. There is nothing to fear from banks of very light, reddish sand, which are met with from time to time.

In running to the West, under the parallel of 0° 24′ to 0° 30′ S., the land will show as a series of promontories, running out into the sea. As you advance, fresh points discover themselves in the same manner, and when these are seen abreast they appear to be narrow, and the sea seems to break at their feet; the flat sandy shore frequently augmenting this appearance.

Great attention ought to be directed to the first land that comes in view. Cape Guarapi, which is one of the first to be seen, is also one of the most northern on the coast. It is easy to be known by a decided mount, situated in the lands at a little distance from the advanced point. The breakers at this point are real and apparent. It is a good point to recognise, because the route may be correctly estimated from it, to arrive readily at Salinas, which is 35 leagues to the West, 5° North. The reckoning may be then made for the night, and there will be no necessity to anchor; but care must be taken to keep at a distance of 10 miles from the land during the night, and not to have a less depth than from 12 to 14 fathoms.

To the eastward of this cape the land is all more southerly, and only one other point, 25 miles to the West, is nearly on the same parallel. These two places are the only ones that project so far to the North, on more than 20 leagues of this coast.

Should this not be made out, you must anchor for the night. During the day run along the coast, paying attention not to come into less water than 7 or 9 fathoms. The land extending to the West consists of flats of sand, covered with wood, separated at distances by sandy tracts. The uniform aspect of these woods resembles a plantation. The shore thus continues to Caita, lying 20 leagues to the West of Guarapi.

The River Caita has on its western shore, in the interior, a village, which cannot be seen from the sea; and there are also, at its mouth, several islets, which are difficult to make out. A chain of hills and downs of white sand commence at the West point, and continue in an E.S.E. and W.N.W. direction for a length of 25 miles; there are islets and breakers at the foot of these downs, in front of the shore, from this point as far as Cape Atalaya, or Atasia, where these sands are more of a reddish colour. There are some woods which show themselves within the land: this is necessary to be known. The rocky and moderately high point, which is met with after these sandhills, is Cape Atasia, or Atalaya; it is edged with rocks, more or less uncovered. In its neighbourhood the water is deeper near the land, and, therefore, it can be approached closer than the preceding coast. It is the most northern point that is met with after the sandhills we have spoken of. Salinas is 4 or 5 miles from them, a little to the South of West.

This cape is a mile more to the North than Salinas; the land ought to be neared to within 7 or 9 fathoms, and then seek, in the slight indentation which the coast forms to the West of this point, for the village of SALINAS, which is the only one which can be found on the whole extent of this coast.

---

* These directions are taken from the "Instructions pour la Navigation aux Attérages et dans la Rivière de Pará," as above.

The land at Salinas is higher than that which is passed before it. About halfway up on this land there may be seen, with the aid of the glass, a village, of which the left hand part is composed of houses covered with greyish shingles; those on the right hand are covered with reddish tiles. Nearly in the middle is a house which is higher than the others, covered with white plaster, which sometimes appears grey when the plaster is old; it is the pilot's house; there may also be distinguished a small church and a cross.

In looking towards the right of this village the land presents the appearance of three bands of different shades of colour, which is formed by the summits of three ranges of hills, of which the tint is more feeble, according as they are more or less distant in the interior.

When arrived to the North of Salinas you must anchor, and wait for a pilot.

From this anchorage may be perceived the Point of Cajetuba to the West, which seems to be confounded with that of Tigioca. That of Marapani rests to the S.W., and Mirandubá to the S.W. 5° W. The mouths of the different rivers leave tolerably large lagoons between these different lands.

ANTILLAS, &c., TO PARA'.—Vessels coming from the Antillas or Cayenne, and which are going to Pará, are then obliged to proceed to the eastward, in order to be able afterwards to come southward; and then may be classed with vessels coming from the North.

Those who would make for Salinas must conform to the directions before given for finding that place. But as sometimes there may be some uncertainty as to the position in longitude, it is necessary for them to observe, that if, in crossing the Line, they should find more than 20 fathoms water, and, being sure of their latitude, they may be certain that they are to the East of Salinas, and then they can make for the land.

If there should be found only 18 or 14 fathoms under the Line, great attention should be paid; you are then between the two directions of N.E. and N.N.W., from Salinas. This last position, more particularly, would lead too near to the banks at the entrance of the passages, and the currents of the flood tide would make the nearing of them very dangerous. Should you, however, make for Salinas, you must keep on the northern tack, and make for the eastward, so as not to come to the land until you have, at the point indicated, at least 18 fathoms water.

OBSERVATIONS ON THE RIVER PARA', AND THE MOUTH OF THE AMAZONS.*

"I have recently heard of another boat's crew to be added to the many previous lives lost at Point Salinas, the pilot station at the mouth of the Amazons; and having had myself, not long ago, nearly occasion to deplore the same misfortune, I think that captains of ships should be warned of the great hazard incurred by despatching a boat there to procure a pilot.

"The vessel I allude to, or to which the boat belonged, was an English schooner, a small vessel and with few hands; so that the captain and boy were all that were left of a crew after the unfortunate event took place.

"In my own case I anchored with the pilots' houses bearing S. by E., and sent the chief mate on shore with four hands in order to procure a pilot. They returned at midnight much exhausted, and the object of their mission unaccomplished. They effected a landing with much difficulty, but not near the station; and, in returning through the surf, shipped a sea, and nearly swamped the boat, and had she not been a very lively one, and fitted with air-tight lockers, she must have gone down. Before I would again risk boat I should weigh and proceed for the river, following Captain Richardson's directions, but I could hardly recommend them to a stranger.

"The pilot signals mentioned by Lieutenant Stopford are still in requisition; his, Captains Wellesley's and Richardson's remarks on the river are clear and concise. I consider Salinas rather a difficult landfall to hit, but the remark that a small white house will be seen (appearing like a speck) with a 'red streak' behind it, is most graphic, and is exactly as it makes. The existence of a tower on Point Atasia, which has so often been doubted, is certain, it being for half an hour distinctly visible to us: it is a low quadrangular building, with apparently a thatched roof, but when a ship is near enough to make out this, she is in dangerous soundings, and ought immediately to haul off. Ours shoaled suddenly to 4½ fathoms, varying nearly 2 fathoms every alternate cast.

---

* *From the Nautical Magazine*, October, 1846, p. 505.

"The pilot, having to collect his boat's crew from the country, does not come off immediately on a ship making her appearance; ours came on board twenty hours after bringing up. The Salinas pilots are ignorant and unskilful, they never take a ship down the river, a captain would, therefore, require to look after them, and, if under way at night, the leadline to be hove occasionally; a fortunate cast of it saved us from running on a bank, the pilot imagining he was in the fairway, and steering a course accordingly.

"Norie's chart of the river, though universally used by all traders, is not entirely correct; but a French man-of-war brig has lately made an excellent survey of it, and discovered a passage through the Pozo, the shallowest soundings, 9 fathoms. I could not ascertain the bearings of any objects to 'guy' a ship through this channel, and, indeed, from the uniform appearance of the land, they would be of little use to a stranger.* Lieutenant Stopford remarks that most of the losses that have occurred at the mouth of the Amazons have taken place here. I should recommend a ship, should she unfortunately run past Salinas and fall to leeward of the Braganza, to anchor, and send her boat to sound a passage; but a Brasilian who resides in the neighbourhood, a man advanced in years, and in easy circumstances, is generally philanthropic enough to board a vessel when he perceives she has got on the Pozo, and to conduct her to Pará. He has been the means, I am informed, of averting many losses. A ship is deemed fortunate to get up the river without the loss of an anchor; this I am inclined to attribute more to the injudicious method of weighing than to either the nature of the bottom or swell, for instead of canting the ship with the yards and head sails, only top sails and top-gallant sails are set in the face of a strong trade, which, with the heavy swell, brings an altogether unnecessary strain on the cable, provided the ship has come-to in a proper berth.

"At Pará merchant ships ought to moor very close in, or immense difficulty will be experienced in getting the lighters backwards and forwards; exertions ought to be used to have them discharged before 2^h p.m., as during twenty-one days' stay in the river the rain commenced daily in torrents about that time, accompanied by the most magnificent lightning.

"The inhabitants of Pará, who are extremely hospitable, more so than I have found them in the other Brasilian cities, esteem it a very healthy place; there Europeans attain a great age. The enormous falls of rain serve to cool the atmosphere, and prevent the waters from stagnating, which they otherwise would do, owing to the flatness of the country; but the mighty Amazon never inundates its verdant banks, but flows on in silent majesty, undisturbed by the outpouring of the clouds, or the swellings of its tributary streams.

"Para has not yet recovered the heavy shock it sustained from the revolution, and English establishments, then broken up, have not again been formed; but its position, both in a commercial and political point of view, is admirable, from its being the only seaport on the largest river in the world, the only emporium for the increasing wants of the vast and imperfectly known countries washed by its tributaries.

"The other entrance to the Amazon is subject to a strong 'perioroca,' or bore, every full and change. The contracted policy of the Brasilian government forbids ships of any nation whatever, except their own, from ascending the river above Pará, at once checking enterprise, impeding commerce, and constraining to lie rotting on the banks untold of quantities of the country's produce, such as cocoa, anatto, and castanios, &c., indigenous and growing wild; a very small proportion of which is brought down to Pará, and there exchanged for gunpowder and salt. The voyage† undertaken by the Indians, to procure salt alone, sometimes exceeds six months, with their decks in a constant wash with the water; being so deeply laden, they experience difficulties on approaching the falls, sometimes having to land their cargo, and carry both it and the canoes across the country, and also launch them on the other side in deep water."

---

* This passage alludes to the survey of Captain *de Montravel*, which is given on our chart, and the description and directions by the same officer are in the preceding pages.

† The first voyage down the Amazons to Pará from Ramon in Bolivia by the Madeira river, and return to that place, with a cargo, has just been effected. It occupied a year and six months.

SECTION VI.

THE EASTERN COAST OF BRASIL, ETC., FROM CAPE ST. ROQUE TO THE RIVER PLATA.

I.—THE COAST OF BRASIL, FROM CAPE ST. ROQUE TO PERNAMBUCO.

We have already shown, in our former work, the Memoir on the Atlantic, that ships bound to India, and not intending to make the northern coast of Brasil, have frequently and unintentionally made the land near Cape St. Roque; that some have unexpectedly found themselves to the westward of Fernando Noronha, and that others have actually been wrecked on the Roccas, or low kays situate to the westward of that island. Of all these the reckonings had been deranged by the WESTERLY or EQUATORIAL CURRENTS, which are found to prevail in this part of the ocean.

The WEATHER, &c.—The EASTERN COASTS OF BRASIL being almost entirely within the torrid zone, South of the Equator, are subjected to the general high temperatures of the lower latitudes; but the great diversity in the equalities of the ground, in the mountainous part of the country, produces a variation in temperature. On the sea, near shore, the ordinary state of the air is at 75° to 77° of Fahrenheit's thermometer, from March to September, and of 77° to 86° toward noon, from September to March: but, in different places, the temperature is higher or lower, according to the localities; for instance, at the high town of *Bahia*, or *St. Salvador*, the mean expansion of the mercury has not been found, between September and January, in the warmest time of the year, higher than 75° in the morning, 79° at noon, and 76° in the evening. At *Pernambuco*, in the same season (5° nearer the Line), the thermometer has marked 83° to 84° toward noon, and risen, at times, to 87°: while at *Rio Janeiro*, nearly 10° to the southward of Bahia, the prevailing heat is much greater, even at 91° to 93°. The difference is produced by the various heights and figure of the land.

In the southern provinces the winter is rather severe; in the parallels of 27½° to 32°, or of the Island of *Santa Catharina* and of the *Rio Grande de S. Pedro*, the snow falls abundantly on the high lands, and the hail, at times, greatly injures the plantations. More in the interior of the country, as the elevation of the land increases, so do the characteristics of winter.

The two seasons, dry and rainy, have already been described.

In reducing the seasons of the year to two divisions only we conform, says the Baron Roussin, to the usual expression; but the diversity of exposures, the vicinity of mountains, and the various degrees of elevation in the ground, produce many local exceptions to the weather generally prevalent. At *Rio Janeiro*, for example, it rains much more in the last months of the northern monsoon, which generally is the dry season, than during the rest of the year; in November to March there are frequent storms in the evening or at sunset, accompanied with thunder and heavy rain; these are quickly succeeded by a clear sky and fine weather. The cause arises from the disposition of the mountains which form the *bassin* or valley of Rio Janeiro, and to the great heat which prevails in it from the sun's diurnal passage toward and from the zenith.

By causes partly analagous, circumstances are similar at *St. Catharine's*, where storms and heavy rains have equally place during several months of the dry season; but these anomalies are limited to certain places, and do not affect on the coast, in general, the characteristics generally assigned.

It may therefore be said, in regard of Brasil, as of Europe, that the state of the weather depends on the situation of the sun in the ecliptic. In general, the weather is fine when the sun is in the hemisphere of the place; but the contrary cause produces an opposite effect.

The worst months of the rainy season are marked by frequent fogs, extreme and continual humidity, and very heavy rains, which often continue for ten or twelve hours consecutively; and it has been remarked that, during the rainy season, the worst weather is at the time of new and full moon, more than at any other period.

It is at this time of the year that several maladies prevail, occasioned by the humidity; the heats which succeed produce lassitude, and it has been observed, that the maladies are so much more heavy when there is little thunder during the passage of the sun to the equinox. In the bays and on the coast they consist, principally, in dysenteries, flux of a bad character, which, being neglected, if not terminating fatally, degenerates into obstructions, indolent tumours, and chronic affections of the viscera, to be healed only by change of climate.

MAKING OF THE COAST.—The aspect of the eastern coast of Brasil, between Cape St. Roque, in lat. 5° 28′, and the Isle of St. Catherine, in lat. 27½°, varies considerably in its appearance. In the southern parallels, from the isle above mentioned to about 60 leagues to the northward of Cape Frio, the lands are very high, have many forests, may be seen, in clear weather, 18 leagues off, and may be safely approached, with the ordinary precautions, on coming in from sea.

But this is not the case in other parts. Farther to the North the land declines in height, and can be seen at a moderate distance only. It must, therefore, be approached with caution. Such are the portions comprised between *Espirito Santo* and the *Monte Pascoal* [Mount Pascal], between *Porto Seguro* and *Bahia*, or the *Bay of all Saints*, between the *Tower of Garcia da Vila* [lat. 12° 32′], and *Cape St. Augustin*, and the following coast, nearly without exception, from *Olinda* to the North, N.W., and W.N.W., as described in the preceding section; whence it will be seen that, from shores of moderate height, they decline to low and sandy beaches, and so continue westward, with few exceptions, to Maranham.

The warnings which may be acquired by soundings, in the proximity of land to which you may be approaching, depend on the part you may be on. These warnings may be of little service on the eastern coast; particularly between the Isle of St. Catharine and Olinda, as the bank of soundings extend to no long distance, and great depths prevail on its outer edges; the parallel of the rocks called the *Abrolhos* [18° S.] excepted.

The soundings give 62 fathoms at 18 leagues East from the Island of St. Catharine; 45 fathoms at 12 leagues East from that of Sebastian; 32 fathoms at 5 leagues to the S.E. of Point Joatinga [lat. 23° 27′]; 70 fathoms at 18 leagues to the S.E. of the entrance of Rio Janeiro; and 68 fathoms at 7 leagues S.E. from Cape Frio. East of the last there are 35 fathoms at the same distance.

Between the parallels of 21° and 22° South the depths, at 12 leagues from shore, vary from 40 to 17 fathoms. At 30 leagues East from Cape St. Thomé there are more than 100 fathoms. Soundings extend more to the East and S.E. of the Abrolhos, though but little to the eastward of the meridian of 37° 10′, which is 27 leagues to the East of these islets; and beyond this there is shortly no ground at 190 fathoms.

No bottom is found at 180 fathoms at only 8 leagues to the S.E. of Cape St. Antonio, of Bahia; but, at 9 miles to the South of this cape, are 28 fathoms of water: again, at 9 leagues on the parallel of the Morro of St. Paulo, with the Morro in sight to the West, there is no bottom at the depth of 50 fathoms.

From Bahia to Olinda the bank is generally steep; at 9 leagues to the East of the Tower of Garcia da Vila the depth is not less than 160 fathoms: at the same distance to the East of the inlet Itapicuru [lat. 11° 45′] the depth is 180 fathoms; it exceeds 170 fathoms at 20 leagues from Rio Real and Rio Sergipe [or about 11° 20′ South], and it is found to be nearly 50 fathoms at 10 leagues to the eastward of the mouth of the Rio S. Francisco. Finally, on all the coast, nearly to Pernambuco, there is found not less than 30 to 40 fathoms at 9 leagues from shore; and at less than double this distance, on the parallels of Pernambuco and Olinda, there is not a depth of less than 110 fathoms.

To the North of the parallel of Olinda the depth comparatively lessens, but it is again very great at a little distance from land. There are found from 6 to 9 fathoms only at 2 or 3 miles from Cape Branco, before the mouth of the River Parahyba, and before the *Fort dos Reys Magos* or mouth of the *Pontangi;* the same at 4 miles off from Cape St. Roque, deepening quickly to 40 fathoms, and thence continuing an increase to 10 or 12 leagues from the coast.

Hence it appears that on a great part of the line of coast between the Isle of St.

considerable trade. Its entrance may easily be found by making *Cape Branco*, which lies 10 miles to the southward.

The PROVINCE OF PARAHYBA comprehends the larger portion of the old captaincy of Itamaraca, and extends West nearly 200 miles to the boundary of Ceara. The river Paraiba, or Parahyba, which rises in the Serra do Jabitaca, flows to the N.E., and falls into the Atlantic by two channels, divided by the Island of St. Bento. The coast of Parahyba extends about 60 miles along the shores of the sea and bays of the town.

The absence of industry and the state of morals in this province has been severely animadverted upon in Brasil, and instead of justice being enforced by the laws, it is said that parties take, not summary justice, but revenge into their own hands. Religious observances, fêtes, and processions are, however, common.

Mr. Kidder, who gives the most recent account of this province, sailed to it by a singularly built vessel, a sort of catamaran, called in Brasil a *jangada*, which is described hereafter.

They sailed from Itamaraca by moonlight for Parahyba, with a tolerable breeze from the land, and as these coasting craft pass usually within the reefs which lie off the shore, they seldom encounter a rough sea. He passed the several little ports of Barras Pontas, Pedras Goyana, Gracire, Pildinhu, &c.

Every village along the coast was adorned with its grove of cocoa trees. Several jangadas engaged in fishing were also passed. The coast presented sandy beaches, now and then intercepted by perpendicular bluffs of red soil, from 20 to 60 feet high, over which, to their verge, grew shrubs. On doubling Cape Blanco he was landed at Tambuin, only 6 miles across the country from Parahyba, whereas the voyage by sea would have been 30 to 40 miles round another cape. Not being able to procure horses he, with some others, walked to the city of Parahyba.

CAPE BRANCO is a projecting headland, in lat. 7° 8′ S. It is a steep, cliffy shore of white sand, which may be distinguished edgewise from North to South, but blends with the adjoining coast when in sight from the offing. Two remarkable cocoanut trees mark the extremity of the cape. At 2 or 3 miles from the land there are 7 or 8 fathoms of water, bottom of sand, oaze, and coral. The coast hereabout affords neither anchorage nor shelter.*

From off Cape Branco the country to the N.W. appears like two plains, which, on advancing, become distinctly marked. The outer one by the sea is low and sandy, but woody in the higher part; the inner plain presents a line of small hills, wooded, and pretty in appearance. The river Parahyba flows between the two plains, and its direction is S.S.W. from its mouth, which is situated in lat. 6° 56′ S.

The South point of the mouth of the Parahyba is low, sandy, and woody, and forms the extremity of the first plain above described. The barrier reef extends in front of this plain, at the distance of nearly half a mile. The North point is formed on the second plain by a more elevated coast, and on it are some cocoanut trees. On the height to the N.W. is the conspicuous convent of *Nossa Senhora de Guia*, inhabited by the order of Santa Theresa. Extensive breakers indicate the mouth of the river, in front of which, at the distance of 3 miles, there are 10 fathoms of water.

Of the two points which form the outer entrance of the river, that on the South is called *Ponta Balea* (Whale Point), although the fishery for whales does not extend to the North of Bahia; that on the North bears the name of *Ponta Lucena*; these points bear from each other N.N.W. and S.S.E. 3½ miles: both are distinguished by extensive breakers.

On the shore within Ponta Balea is a low fort, *Cabedello*, which may be seen from the offing when traversing off the mouth of the river, and it serves as a point of recognition for the low and even coast, which is destitute of other buildings. The bar is shoal, and dangerous to a stranger, and its best water at low tide is 2½ fathoms. Pilots come off and bring vessels to a roadstead off the fort, in order to be visited.

The city of Parahyba is about 4 leagues from the sea, but the sinuosities of the river make the distance 6 leagues. Vessels of 150 or 200 tons cannot proceed much above the Fort Cabedello, but small vessels go up to the town, and load with cotton, sugar, Brasil wood, &c.

---

* The *Edmond*, from Havre, bound to Valparaiso, struck on a bank off Paraiba, whence it was impossible to get the ship off. She was drifted by a strong current on to the coast, and in light winds and calms struck on a rock, where 12 and 14 fathoms were marked on the chart.—*Annales Maritimes*, 1848, p. 267.

From a survey of this river by the Honourable *Captain de Roos*, R.N., in 1832, it appears that the Fort Cabedello, on the eastern side of the entrance, stands in lat. 6° 57′, lon. 34° 50′. Variation of the compass, 5° West. High water, on full and change, at 5^h. Springs rise 12 feet. The land breeze is seldom experienced here.

The remarks of Captain de Roos, as follow, were first given in the "*Nautical Magazine*," December, 1833.

"The river Paraiba do Norte, which is situated 67 miles North of Pernambuco, has an extensive commerce, and is generally visited by ships homeward bound from that port, to complete their cargoes. Vessels drawing 16½ feet water can safely enter at the springs.

"The coast here trends North and South, and the direction of the river is S.S.W., nearly in a straight line. On the South point (Balea) of the entrance, which is low, sandy, and wooded, is built the strong fortress of Cabedello. The North point is also low, with cocoanut trees upon it; but immediately behind is some high wooded land, on the point of which the remarkable convent de Guia is distinctly seen. The barrier reef terminates abreast of the South point, when the bar commences, and continues till it reaches the extensive shoals which stretch out from Point Lucena.

"Ships approaching from the South are recommended to make Cape Branco, which is 4 leagues South of Cabedello. It is a remarkable point, with two cocoanut trees on the very extremity. From the northward the latitude may be run down, when Cabedello Fort will appear. It is the only fortress for many leagues upon the coast, which otherwise bears a great sameness of appearance. Ships should on no account venture into less than 6 fathoms of water.

"A gun fired will bring off a pilot; they come in 'jangadas'* from the Coco village to the South of the fort, and are considered expert and trustworthy.

"The bar is at some distance from the land, and as the passage is tortuous, it is not safe to attempt to enter without a pilot. On it there are 8 feet of water at low water spring tides.

"The bottom is sand, in some spots hard. There are breakers on either hand, and the marks which are given are difficult to distinguish, and therefore not to be depended upon.

"The land winds are not of frequent occurrence. Vessels therefore have generally to beat out against the prevailing N.E. wind, which blows steadily. H.M. sloop *Algerine*, working out in October, 1832, made twenty-one tacks.

"It is usual for all ships entering to anchor off the Fort Cabedello, in order to be visited; after this they are at liberty to proceed up the river. H.M. sloop *Algerine* was anchored with the fort bearing, by compass, S. 60° E., distant a quarter of a mile, in 5½ fathoms. Bad water and few supplies are to be found at this place.

"A different pilot is appointed to take vessels up the river, which, as the wind is generally fair, is an operation of little difficulty or danger, and is almost always effected in one tide. The two shoalest spots are situated, one just above Cabedello, and the other abreast of the entrance of the Tambia river. Going down is tedious, as ships have beating winds, but the reaches are long. The bottom throughout is soft mud.

---

* "A voyage at sea upon a jangada is not an incident of every day's occurrence, at least with North Americans. Nor is it easy to convey in words a perfect idea of the simple and singular structure by which the savages of Brasil were accustomed to traverse the waters of their coast hundreds of years ago. Although in constant use since the period of discovery, the jangada has preserved its aboriginal form and style of construction, and even in this age of improvement is not likely to undergo any change for the better. Properly speaking, it is merely a raft, composed of unhewn logs of a peculiarly light wood, called *pau de jangada*. Trunks of trees are selected about 6 inches in diameter, as nearly straight and uniform as possible. These are stripped of bark, sharpened at each end so as to cut the water, and then fastened to each other by three rows of transverse pins. The number of logs used is generally six, although I have seen them composed of three, four, seven, and even twenty logs. These latter are used as lighters for unloading vessels, and are nearly square in form, while the sailing jangada is rectangular, and generally about 5 feet in width by 16 or 20 in length." —*Kidder's Brasil*, 1844. For a figure and description of them, see Steele's "*Elements and Practice of Rigging and Seamanship*," 2 vols. 4to., 1794.

"It is necessary to warp into the anchorage off the city, which is perfectly sheltered and secure. Indeed, the only vessel ever lost in the river was one which, by inadvertence, grounded upon her anchor and foundered.

"Water is to be procured by sending boats with casks up the river. That of the Tambia is celebrated for its purity. Provisions may be had in abundance, and at a very moderate rate.

"The town of PARAHYBA contains about 3,000 inhabitants. The principal street is broad and paved. The houses are mostly of one story, with the ground floors as shops, and some have glass windows. Here are six churches, and some convents, with several public fountains. The prospects from the windows present the finest Brasilian scenery; extensive and evergreen woods, bounded by a range of hills, and watered by several branches of the river, with here and there a whitewashed cottage upon their banks, half concealed by lofty trees.

"The lower town consists of small houses, and is situated upon the borders of a spacious basin or lake, formed by the junction of three rivers, which from hence discharge their waters into the sea by one considerable stream. The banks of the basin are covered with mangroves, as in all the salt water rivers of this country. The lands of the captaincy are rich and fertile, and the sugar is considered as equal to the best in any other part of Brasil.

"The river is very winding, and is not navigable beyond the present anchorage. Canoes go up a long distance, although in the summer season the bed of the river becomes dry beyond 20 leagues. Its prevailing course is N.W., and the town is situated upon the southern bank. One of the finest buildings it contains is a *new trapiche*, or government warehouse. In front of it were three English vessels anchored, loading with cotton and Brasil wood. They were the only vessels in port.

"Extending from the river, two streets contain the principal buildings and commercial establishments of the lower town. Several houses were then in process of erection, rents were high, and landed property had recently been on the rise. The number of inhabitants is less than in the upper town. The elevation of the latter above the water is about 200 feet, and rises rather abruptly. The military arsenal, a large yellow building, is beautifully situated in a level area between the two towns. The public edifices of the upper town and the lower town are built in the style usual in the Brasilian cities, and the treasury has in front a high flight of steps, by which it is entered. The streets are wide, and paved with a kind of clay slate, much worn. The old *gelousias*, suspended from projecting cornices of thick carved stone, are still seen at Parahyba, which in its general aspect is like our towns.

"A gentleman just returned from a journey into the interior described the state of morals and civilization in the sertoens of this province, and of Rio Grande do Norte, as shocking in the extreme."—*Mr. Kidder.*

The harbour is, as before stated, about 10 or 12 miles below. Small vessels ascend to the town; the river navigation is performed in rude boats or canoes.

The coast to the southward of Cape Branco, and hence to the city of *Olinda*, has been very imperfectly described. The old charts and pilots represent an opening of the Recife, called *Porto dos Francezes*, at about 4 leagues to the southward of Cape Branco, affording occasional anchorage for ships, but on bad ground. Hence southward the Recife continues to the *River Capibarami*, or Goyanna River, in lat. 7° 30′.

The mouth or bar of this river lies nearly midway between the two points named *Coqueiros*, or *Cocoa tree Point*, and *Ponta de Pedras*, or *Rock Point*. Here the outer reefs extend to nearly a league from the land. It is said that vessels of 40 tons may proceed up the river to the town of *S. Miguel de Goyanna*, which is 7 leagues up from the bar.

The Points Coqueiros, or Guia, and Pedras, in lats. 7° 25′ and 7° 35′, are nearly on the same meridian, 34° 47′, and they are the easternmost points of Brasil.

ITAMARACA.—This island, lying parallel with the coast of the main, is about 8 miles in length from North to South. At its North end is a shallow and difficult channel, called the *Barra* or *Entrance of Catuama*, which admits nothing larger than *boats and small craft*, although in some parts there is more than 3 fathoms at high water.

At the South end it has been said vessels of 300 tons may enter, on a W.S.W. course, between the reefs, which extend outward 2½ leagues; but it must be with a fair or leading wind, as there is not sufficient space for tacking. In the channel at low water spring tides there is a depth of 3 fathoms, and the tide rises 9 feet. The river in the narrowest part is a musket shot in breadth, and at this narrowest part has a bank, which has a depth of 2½ fathoms over it at low water spring tides. Immediately above this bank is deep water, and so smooth that a ship may ride with any sort of cable. To this anchoring place from the bar the distance may be about a league.

Itamaraca has been fully and pleasingly described by Mr. Koster.[*] This is one of the oldest settlements of the Portuguese upon the coast, and was given to Pedro Lopez de Souza, who took possession of it in 1531. In the year 1630 it had twenty-three sugar works upon it, but as a commercial station it has fallen into insignificance. The island, however, is still populous, and has several pleasant villages, the inhabitants of which live much more happily than a stranger would imagine. The shores are planted with cocoa trees, among which are thickly scattered the straw cottages of fishermen; in some spots may be seen respectable whitewashed dwellings, and there are salt works on the island, which are one great source of its wealth; these are formed upon sands, which are overflowed by the tide at high water.

Mr. Koster says the harbour is good, and the entrance to it commanded by an old fort, which is much out of repair; the garrison is scanty, and without discipline. The entrance to the port is formed by an opening in the reef. It is readily discovered from sea, being immediately opposite to the channel or river into which it leads, and as there are breakers both to the northward and southward. Having entered, some small breakers will be seen ahead, or rather toward the South side of the channel, unless the tide is out, and then the water is quite still. The anchoring ground is opposite to the fort, and on the outside of it; but opposite to the village of Conception (*N. Sa. da Conceiçao*), which is farther in than the fort, there is considerable depth of water. Some parts of the ground are rocky, but others good.

Itamaraca has improved greatly under the auspices of a respected vicar, Pedro de Souza Tenorio, and a happy change has latterly appeared in society under his charge. When the people of colour now go to mass, if the family be in a respectable way of life, the younger females wear gowns of printed cotton, English straw bonnets, stockings also of foreign manufacture, and neat shoes made by the workmen of the country. The young men appear in nankeen pantaloons, and jackets of printed cotton, shirts of cambric muslin, hats of English make, stockings, and shoes. "Indeed, of late years, since articles of dress have been cheap, and have come into general use, since a subject of emulation has arisen, and the means of showing it has been afforded, every hamlet sends forth its rival belles and beaux."

PAO AMARELLO.—The bar of PAO AMARELLO, or Yellow-wood River, is in lat. 7° 54′, lon. 34° 49′ 55″. This little harbour is formed by a break in the reef or *wall*, which here runs parallel to the shore, both to the northward and southward. There is a depth of 3 fathoms near the entrance but it is a spot of difficult access, lying between the reef and the land, and is unsafe, because the channel is so narrow that it is necessary to ride with one anchor on the reef and the other on shore, to prevent the ship's swinging with the tide.

The shore between this place and Itamaraca is composed of woody hills, cultivated, and separated from the sea by a beach of white sand, at 2 or 3 miles from which you may find from 10 to 14 fathoms of water, bottom of sand and gravel.

The coast hence southward to Olinda increases in height, and may be seen from a distance of about 6 leagues.

On advancing to the Amarello, you may see on the beach a small battery, intended to defend the opening in the Recife. Vessels drawing 6 or 7 feet of water which enter here may proceed with high water hence to Pernambuco, by passing within the Recife and banks of Olinda.

At 7 miles to the southward from Pao Amarello is the POINT of OLINDA, in the parallel of 8° South. The navigation of the coast between is impeded by extensive reefs, as shown on the chart. Ships coming from the northward should, in passing the Point of Olinda, give it a berth of 3 miles, keeping it not less than 10 fathoms, for within that distance the soundings may become irregular, and the reef in many parts is steep-to.

---

[*] Those who wish for a copious and correct description of Northern Brasil may be amply satisfied by the perusal of the two volumes by Mr. Koster, London, 1817.

PERNAMBUCO AND OLINDA.

A good idea of the Road and Harbour of Pernambuco, with the coast of Olinda, may be gained from a reference to the survey of Captain Hewett, from whose pen have issued the following directions.

The CITIES of PERNAMBUCO and OLINDA are the principal places of trade on the Brasilian coast, next to Rio Janeiro and Bahia. The land in the vicinity is fertile and well cultivated, producing principally sugar and cotton. It is not of that elevated and grand description as the land about Rio, hereafter described, but it affords the most pleasing prospects, from the richness of its plains and the numerous seats scattered in every direction. The summit of Olinda, on approaching the land, may be recognised at a distance of 5 or 6 leagues.

PERNAMBUCO.—The RECIFE, or REEF of Pernambuco, which forms the harbour, runs in a parallel line with the shore, at about a musket shot distance from Cocoanut Island to the southward, to abreast of Fort Bruno to the northward. On the extremity of the latter is a small octagonal tower, called PICAO, and mounting seven guns: this tower assists Fort Bruno in commanding the immediate entrance to the harbour. Between the Picaõ and Fort Bruno is the harbour bar, the greatest depth on which at low water is 10 feet, and is formed by an accumulation of sand, washed through a natural break in the reef at a short distance from the Picaõ tower. This break has been frequently filled up by the Brasilians, but all their efforts to exclude the sand totally have hitherto proved ineffectual, so that the water on the bar gradually decreases in its depth, and the inhabitants in consequence are under the greatest apprehension of the harbour being in time choked up.

Large ships discharge and take in their cargoes in a basin called the *Poço*, or *Well*, immediately at the head of the reef, and outside the harbour. The entrance to the latter is between some detached sunken rocks, apparently a continuation of the reef, called the GREAT BAR. It has on it 17 feet of water, which increases to 20 within, where the vessels moor. The inner, northern, and southern sides are formed by the gradual decrease of depth toward the shore, and are sandy.

Small vessels run over the Bar of Picaõ, called also the LITTLE BAR, which has 12 feet on it; the marks for it are the two turrets of the southern angles of Fort Bruno in one. Over one or the other of the two bars described all vessels must pass to go into the harbour.

At the distance of 1¼ miles E. by N. from the Picaõ tower lies the body of the ENGLISHMAN'S or ENGLISH BANK, in length from North to South three-quarters of a mile, and in breadth from East to West half a mile. The shoalest water on the bank is 2 fathoms; the bottom is excessively rocky, as well as its neighbourhood. The marks for it are a large cocoanut tree, distinguishable from all parts of the bay, and situated between the two most elevated houses on the hill above OLINDA, in one with a kind of jetty on the beach immediately under that town, and bearing N. ½ E. The cross bearing for the southern extremity must be taken by the compass, the Picaõ tower due West.

Between this bank and the Basin, or *Well*, is a passage of 5 fathoms, nearly half a mile in breadth.

In the offing the bottom is composed of fine white sand, but nearer the coast numerous patches of coral are interspersed, dangerous to cables. *The best anchorage for men-of-war* is with Olinda North, and the Picaõ tower N.W., in 6 fathoms, as this is the only spot in the bay, near the town of Pernambuco, where they can lie without the danger of parting in the space of three or four days.

Ships from the northward, on sailing in, should give Olinda Point an offing of 3 miles, never decreasing the depth to less than 10 fathoms, for within that depth the irregularity of the soundings may become alarming to a stranger. When abreast of Olinda, with the offing described, a S.W. course will reach the anchorage, clearing Englishman's Bank about a mile, and gradually altering the depth to 6, 8, 7, and 6 fathoms.

The Lighthouse, with *revolviug* light, at the entrance of the harbour, was first lighted 2nd February, 1822. It stands about 50 yards from Fort Picaõ, on the point of the reef. Teh tower, octagonal and painted white, stands on a rock which is covered at one-quarter flood. The lantern exhibits three lights in suceession from sunset to sunrise, of which two are brilliant and the other *red;* these make one complete revolution in every two minutes, and may be seen from the mast-head, in clear weather, 20 miles off.

The Situation of Pernambuco was satisfactorily determined by Captain Hewett, in 1814, 1815. The tower of *Fort Picaõ* was given by this gentleman as 8° 3′ 39″ S., and 34° 52′ W. Captain Cotesworth, commander of the *Creole*, a regular trader to Pernambuco, has since given us the latitude of the same tower as 8° 4′ 15″, the result of repeated observations; and he pronounces Captain Hewett's longitude to be strictly correct. From the relative situation of Olinda Point, Captain C. makes its latitude 8° 1′. The survey by the Baron Roussin gives the latitude of the Fort as 8° 3′ 27″, and the longitude 34° 51′ 42″, which confirms that of Captain Hewett.

CAPE ST. AUGUSTIN is a high, rugged, and projecting promontory, which may be readily known by its red cliffs, with a church and barn on its summit. It has also, on its eastern extremity, a battery mounting five guns, which is difficult to be distinguished at any considerable distance. The cape is described by M. Roussin as a hill lightly wooded, of moderate height, declining gradually to the sea; remarkable by the red cliffy spots on the termination of several points, by its arid aspect, and the church on its summit, with the battery to the E.N.E., intended to protect several small anchorages in the vicinity, but which appear to be no longer used.

By giving Cape St. Augustin an offing of 6 or 7 miles when bound to Pernambuco from the southward, and steering a N. by E. course, you will soon gain a sight of the city of Olinda ahead, situated on the northern extremity of the bight, which contains the Harbour and Road of Pernambuco. The city stands principally on the southern declivity of a pleasant hill, and when the highest buildings are well in sight, Pernambuco will be discovered to the southward of them, the site being low and sandy.

DESCRIPTION OF THE PROVINCE AND INTERIOR OF PERNAMBUCO, ETC.[*]

The province of Pernambuco has constituted one, if not the most important, part of the Brasilian empire since the period of the Dutch conquest. It abounds with many good harbours, and the soil is very generally fertile. Its capital has been called the Tripoli of America.

The province of Pernambuco, as reduced by the separation of Alagoas, is divided into thirteen comarcas, viz., Recife, Cabo, Rio Formoso, San Antao, Bonito, Limociro, Nazareth, Puo d'Alho, Goyanna, Brejo, Garanhuns, Flores, and Boa Vista; the free population of the whole is stated by Mr. Cowper to amount to 600,020 souls (exclusive of foreigners); the basis of this calculation is the census taken in 1842, the period of the election of the legislative assembly of 1846, which gave for the whole province 120,004 hearths, and upon the calculation made of there being five persons to each hearth, viz., the husband, wife, two children, and one domestic. This last census, according to the best-informed persons, is as nearly exact as can be ascertained. The number of slaves is by some calculated to exceed by two-thirds the free population; others increase this estimate, but the former proportion may approximate more closely to the true number. The greater portion of the slaves are employed in the 512 sugar plantations which this province contains, and in about 200 small engenhos in the western comarcas, where the coarser kind of sugar is manufactured for the consumption of the inhabitants of the *Sertos* (or mountainous region), in the provinces of Piauhy, Ceara, &c. The other predial slaves are employed in the cultivation of cotton, mandioca, vegetables, &c. In the comarca of the Recife, which possesses many extensive plantations of sugar-cane, the cultivation of farinha, vegetables, fruit, &c., for the consumption of the Recife and Olinda, with their suburbs, forms a gainful pursuit to the agricultural people.[†] The island of Itamaraca, in this comarca, is remarkably fertile, producing tropical vegetables of every description, and is celebrated for the superior flavour of its grapes and other fruits.

---

[*] Extracted from Macgregor's "Commercial Tariffs," &c., 1847; and the remainder written mostly in the year 1811.

[†] Mr. Cowper's, the British Consul's, Reports, 1846.

PERNAMBUCO, or, as this city is more commonly called in the country, the *Recife*, or the Reef, is situated close to the Atlantic coast. Its free population, including the suburbs, is stated by the British consul, in 1845, to amount to 74,310 inhabitants, and the adjoining town of Olinda has 17,824, so that the total number of free inhabitants in these towns, exclusive of slaves, is 92,134, among whom are enumerated 160 French, 125 English, and 300 Germans, including 200 German labourers, who arrived under contract for the service of the provincial government. Of United States citizens the number seldom exceeds 10 or 12.

The city of Pernambuco and its suburbs are divided into three parishes; within the town are those of San Pedro de Gonsalves, or Recife, San Antonio, and Boa Vista. These three contain seventeen churches, and also a British chapel; two monasteries; three recolhimentos, or asylums for girls; six hospitals, public and private; a theatre; a government palace; customhouse; prison; marine and military arsenals; and three suits of barracks for troops. Its institutions for public instruction are a lyceum, two Latin, and seven primary schools. It has three printing presses, publishing two daily newspapers and three other periodicals, besides occasional volumes of books. Its streets are paved in part, and illuminated by 360 lamps. Four old fortresses, the Picaõ on the extremity of the reef, the Brum and the Buracco on the sandy shore towards Olinda, and Cinco Pontas, or the Pentagon, on the southern front of the city.

The appearance of Pernambuco when seen from the water is peculiar; its side is flat, and but little elevated above the level of the sea. The white high buildings erected on the praya seem to rise from the ocean. Inseparable from this view of Pernambuco is that of Olinda, on a bold and picturesque hill 2 miles North. Its natural appearance caused Duarte Coelho, as he arrived on the coast, in 1530, to exclaim, "*O linda situaçao para se funda uma villia!*"—"O beautiful site for a town!" His exclamation was immortalised by being used, in part, to furnish a name.

Olinda continued the capital of the province for about 200 years; but at length, owing to its situation not being favourable for commerce, from being too far from the Recife, which forms the only harbour near, a town gradually arose up near the Recife, by which name it was called. Mr. Kidder says, "Many of the houses of Pernambuco are built in a style unknown in other parts of Brasil. That occupied by Mr. Ray, United States' consul, stood fronting the water side. Its description may serve as a specimen of the style referred to. It was six stories high. The first, or ground floor, was denominated the armazem, and was occupied by male servants at night; the second furnished apartments for the counting room, consulate, &c.; the third and fourth for parlours and lodging rooms; the fifth for dining rooms; and the sixth for a kitchen. Readers of domestic habits will perceive that one special advantage of having a kitchen located in the attic arises from the upward tendency of the smoke and effluvia universally produced by culinary operations. A disadvantage, however, inseparable from the arrangement is the necessity of conveying various heavy articles up so many flights of stairs. Water might be mentioned for example, which, in the absence of all mechanical contrivances for such an object, was carried up on the heads of negroes. Surmounting the sixth story, and constituting in one sense the seventh, was a splendid observatory, glazed above and on all sides.

"The prospect from this observatory was extended and interesting in the extreme. It was just such a place as the stranger should always seek in order to receive correct impressions of the locality and environs of the city. His gaze from such an elevation will not fail to rest with interest upon the broad bay of Pernambuco, stretching with a moderate but regular incurvation of the coast, between the promontory of Olinda and Cape St. Augustine, 30 miles below. This bay is generally adorned with a great number of *jangadas*, which, with their broad latine sails, make no mean appearance. Besides the commerce of the port itself, vessels often appear in the offing, bound on distant voyages, both North and South. No port is more easy of access. A vessel bound to either the Indian or the Pacific Ocean, or on her passage homeward to either the United States or Europe may, with but a slight deviation from her best course, put into Pernambuco. She may come to an anchor in the Lameirão, or outer harbour, and hold communication with the shore, either to obtain advices or refreshments, and resume her voyage at pleasure, without becoming subject to port charges. This is very convenient for whaling ships and South sea traders, which accordingly make this port a great rendezvous. In order to discharge or receive their cargoes, they are required to come within the reef, and conform to the usual port regulations."

Ships of war seldom remain here long. None of large draught can pass the bar, and those that can are required to deposit their powder at the fort. The strong winds and heavy roll of the sea are frequently sufficient to part the strongest cables. The commercial shipping is under full view from the observatory, yet it is too near at hand, and too densely crowded together, to make an imposing appearance.

Olinda, built upon a hill, has white houses and massive churches with luxuriant foliage interspersed among them, in which those edifices on the hill side seem to be partially buried. From this point a line of highlands sweeps inward, terminating at Cape St. Augustine, and forming a semicircular *reconcave*, analogous to that of Bahia. The summit of the highlands is crowned with green forests and foliage.

"Indeed," says Mr. Kidder, "from the outermost range of vision to the very precincts of the city, throughout the extended plain, circumscribed by five-sixths of the imagined arc, scarcely an opening appears to the eye, although, in fact, the country overlooked is populous and cultivated. Numbers of buildings, also, within the suburbs of the city are overtowered and wholly or partially hid by lofty palms, mangueiras, cajueiros, and other trees. The interval between Recife and Olinda is in striking contrast to this appearance. It is a perfectly barren bank of sand, a narrow beach, upon one side of which the ocean breaks, while on the other side, only a few rods distant and nearly parallel, runs a branch of the Beberibe River. This stream is navigable to boats as far as Olinda, and forms the principal channel of communication with that place, although the beach may be considered a species of turnpike."

At a distance of from one-fourth to half a mile from the shore is the bank of rocks already mentioned as extending along a great extent of the northern coast of Brasil. Its top is scarcely visible at high water, being then covered with a surf which dashes over it. At low water it is left dry, like an artificial wall, with a surface sufficiently even to form a promenade rising out of the sea. It is from 2 to 5 rods in breadth. Its edges are a little worn and fractured, but both its sides are perpendicular to a great depth. The rock in its external appearance is of a dark brown colour. When broken, it is found to be composed of a very hard species of yellow sandstone, in which numerous bivalves are imbedded in a state of complete preservation. At several points deep winding fissures extend through a portion of the reef, but in general its appearance is regular, much more so than any artificial wall would be after exposure for ages to the surges of the ocean.

Opposite the northern end of the town, as though a breach had been artificially cut, there is through this reef a channel of sufficient depth and width to admit ships of 16 feet draught at high water.

Close to this opening on the extremity of the reef stands the fort, built by the Dutch. Its foundations were admirably laid, being composed of long blocks of stone imported from Europe, hewed square. They were laid lengthwise to the sea, and then bound together by iron. A wall of the same origin extends from the base of the fortification to the body of the reef.

The district of San Pedro is not large. Its buildings are chiefly in the old Dutch style of architecture, and many of them retain their latticed balconies or *gelouzias*.

The principal street of the Recife is Rua da Cruz. At its northern extremity, towards the Arsenal da Marinha, it is wide and imposing in its aspect. Towards the other end it is narrow, and flanked by high houses, like most of the streets by which it is intersected. A single bridge connects this part of the city with San Antonio, the middle district. This bridge across the Beberibe is more modern than the one having a row of shops on either side. That having been broken down in the revolution of 1824, was rebuilt in a different style. It has no covering, but is flanked on either side and in the middle by rows of seats, which furnish a favourite resting place to throngs of persons who walk out in the evenings to enjoy the cool air and refreshing sea breeze. On the side towards the sea vessels anchor near to it, though they do not pass above this bridge. At either end stands an archway, built of brick. These arches are disconnected with the bridge, although they span the street leading to and from it. The principal object of their construction seems to have been to furnish a prominent place for shrines and images. These arches survived the destruction of the old bridge, on account of the religious purposes to which they are devoted.

In the San Antonio quarter of Pernambuco are the palace and military arsenal, in front of which a wall has been extended along the river's bank. Above the water's edge there is a row of green painted seats, for the accommodation of the public.

The principal streets of this quarter, with an open square used as a market place, are spacious. The bridge crossing the other river is long, although the stream beneath is shallow. On the southern or south-western bank of this river stands the British chapel, in a very convenient place. Boa Vista is chiefly occupied by private residences and country seats. A few large buildings stand near the river, and like most of those in the other sections of the town are devoted in part to commercial purposes. Beyond these the houses are generally low, and are surrounded by gardens or *sitios*. The streets are unpaved, and in a most wretched condition, and many of the streets and lanes in the suburbs are filthy.

Pernambuco carries on a great foreign and domestic trade. The coast near it is very low, and the country well clothed with woods in perpetual verdure, which, contrasted with the white cottages scattered along the shore, the Indians fishing in their jangadas or canoes, and the beautiful serene sky, affords to the European, as he approaches it, a most pleasing prospect.

The islands on which the town is built are connected by two bridges, one of which is a most beautiful structure, constructed by the Dutch, when they took this place from the Portuguese in 1670. It consists of fifteen arches, under which runs a strong and rapid river, that comes many hundred miles down the country. On each side of this bridge are shops full of European merchandize, particularly English manufactures, or, as they are called by the Portuguese, "*facendas Inglesas.*" The river is seen winding up as far as Olinda, which is seated on a hill; on either bank beautiful white cottages, intermixed with mangrove and cocoa trees and fruitful vineyards, the Indians paddling down the river with their unwieldy canoes, the fishermen on the beach drying their nets, and nature displaying her gayest verdure, form altogether a *coup d'œil* which it is impossible to describe. The other bridge is a very long wooden one, in which there is nothing remarkable, more than its being quite open to the breeze which comes down the river. It is, on that account, much resorted to in the evening, especially by the English, who, seated on each side, often amuse themselves by criticising, with the characteristic liberty of their country, the numerous passengers.

The harbour of Pernambuco is wonderfully convenient. It is formed by a natural pier, extending 5 miles in a direct line. This is a coral reef so exactly straight and even that one would almost imagine it the work of art. The vessels lie alongside each other in tiers, moored head and stern, at about half pistol shot from the shore, and close to this reef, which at high water spring tides is nearly on a level with the surface of the sea, and forms an excellent barrier.

At Pernambuco the heat is excessive, the thermometer frequently being at 90° in the shade. During the night it is always calm, with much lightning. At about 9^h a.m. the sea breeze comes gradually, and is strongest about noon, when by degrees it dies away into a calm, that generally takes place toward sunset.

The sudden change of temperature, common in other climates, is rare in Pernambuco, especially during the summer months, at which period the weather is delightful. In the rainy season some days occur when the atmosphere is charged with haze and mist, rendering the sun invisible; some minutes before the rain falls the clouds descend thick and black, the air is oppressively close, the heaving of the sea is suspended, and a gloomy calmness prevails, sure prognostics of the approaching rain, which shortly pours down in torrents, refreshing the parched earth, and fertilizing the soil.

The port is very well fortified in appearance, but it would make a poor resistance in case of attack. All vessels on arriving in the harbour are obliged to land their powder, which is conveyed by proper officers to a magazine, and returned on departure; but while deposited it is in general well tithed.

As Pernambuco is seated on very low ground, and quite surrounded by water, intermittent fevers are very common. There is only one hospital, which consists of a very large room, with about thirty beds on each side, filled with wretches suffering under the most loathsome diseases. A man stands at the door to solicit the charity of passengers, which contributes to defray the expenses. When a patient dies, he is laid on a table at the entrance, with a plate on his breast, to receive money for his burial. Four or five are frequently thus exposed at once. Great numbers of slaves die of the small pox, fever, and dysentery.

Mr. Koster has said of Pernambuco that the land is low, and consequently not to be seen at any considerable distance; "but as we approached it, we distinguished the hill upon which stands the city of Olinda, a little to the northward, and at some leagues to the southward the Cape of S. Agostinho; a nearer view discovered to us the town of *St. Antonio de Recife** almost ahead, with the shipping in front of it, the dreary land between it and Olinda, which is 1 league distant, and cocoa groves northward, as far as the eye can reach; southward of the town are also seen great numbers of cocoa trees, woods, and scattered cottages. The situation of Olinda is the highest in the neighbourhood, and though not very high, is still not despicable. Its appearance from the sea is most delightful; its whitewashed churches and convents upon the tops and sides of the hill, its gardens and trees interspersed among the houses, afford a promise of great extent, and hold out expectations of great beauty.

"A large row boat at last made its appearance, doubling the end of the reef near the small fort, which was declared to be that which brings off the pilots. The *putram-mor*, harbourmaster, in his naval uniform, likewise came on board. A large launch followed the pilot, manned chiefly by negroes, almost naked; the colour of these men, the state in which they were, their noise and bustle when certainly there was no occasion for it, and their awkwardness, were to me all new.

"The pilot placed himself near to the ship's windlass; a Portuguese sailor was sent to take the helm, but still the vociferation was extreme; the man seemed to think that by speaking very loud he could make the English seamen understand his language, and what with his bawling to them and to his own people, and their noise, the confusion was excessive; however, we doubled the fort in safety, and came to anchor in the upper harbour."

PARTICULAR INSTRUCTIONS FOR PERNAMBUCO, ETC.

Having given above the general description of Pernambuco, by Captain Hewett, &c., we now add more particular instructions from the *Pilote du Brésil* of the Baron Roussin, annexing to the same those of a British officer, still more recent.

The *true* bearing and distance of Cape St. Augustin (Agostinho) from the point of Olinda is S. 17° W. (by compass, S. 21° W.) 21 miles.

Cape St. Augustin is the point or landfall which vessels generally make when destined for Pernambuco during the southern monsoon. The coast to the North of this retires half a league to the West, and forms a slender bay (*Gaybú*); at 17 miles northward from the cape is the city of Pernambuco. The middle of this coast is marked by the chapel of *Nossa Senhora do Rosario*, built on an elevation about half a league inland, and having two towers, or steeples, which facilitate a knowledge of the place when coming in from sea. The shore is low, and covered with trees nearly as far as Pernambuco; and in coasting along shore at from 2 to 4 miles off there will be found from 11 to 17 fathoms of water, bottom of sand with a mixture of broken madrepores.

After having recognised Cape St. Augustin, which is situate in lat. 8° 20′ 41″, lon. 34° 56′ 34″, you may proceed to the northward, at 2 or 3 miles from the coast, until you raise the Fort Picaõ and lighthouse, between the N.W. and W.N.W.; then steering for the latter it may be approached, according to the vessel's draught, until you bring the cocoanut tree of Olinda, standing between the two highest edifices of the city, nearly N. by E. On this bearing you will be at 700 or 800 toises (say three-quarters of a mile) from the lighthouse, and you may anchor in 6 or 7 fathoms, bottom of sand with shells and patches of coral; bad bottom, it is true, but which it is almost impossible to avoid entirely in the Road of Pernambuco.

When coming to the port during the northern monsoon, it is proper to make the coast a little to the North of Olinda Point, which is in lat 8° 1′ S., lon. 34° 50′. From this point the coast, as already noticed, is bordered with a rocky shelf and breakers, extending outward about 2 miles, and should therefore be passed at the distance of 3 miles in 8 or 9 fathoms, and until you bring the lighthouse and Fort Picaõ at several degrees to the North of West; thus avoiding the *English Bank*, a flat of sand and rock before described, and over which the sea breaks in adverse weather.

The Road of Pernambuco is dangerous in such weather, as the swell is then very strong. The anchorage is on a rhomb to the West of the meridian of Olinda Point, at less than half a mile from the Kay or Recife of Pernambuco, ; and there is some risk of driving on shore with a strong wind from the points between S.S.E. and E.N.E., more particularly in the adverse season or southerly monsoon, March to September, when the winds are frequently violent.

---

* The outer portion of the city of Pernambuco. The middle part is called *Sant Antonio*, and the interior or western part *Boavista*.

The northern monsoon is at times not more favourable than the other to the surety of vessels which anchor here. Easterly winds are more frequent than those from the North, especially on the approach of new and full moons; and although in this season the weather is commonly fine, and the breezes weaker than those of the opposite season, it is requisite to take all precautions against accidents, and the first of these precautions is not to anchor too near the land.

We have noticed that the bottom of the Road of Pernambuco is of bad quality; in fact, this anchorage with a cable liable to be cut offers no security, and vessels employed here should have iron cables, for the best serving or rounding would protect the others but very imperfectly from the effect of the great quantity of corals, madrepores, and lost anchors interspersed over the bottom of this roadstead.

Vessels commonly moor E.N.E. and W.S.W., in order to have a long warp toward the offing, as well as to be more firmly situated, and more ready for getting under weigh. It is prudent to have the sails and all things so disposed as to get under weigh promptly, should it be required. In the contrary case, drop an additional anchor in the evening, which you raise next morning.

Should you be obliged to remain some time in the road during the southern monsoon, it may be convenient to have two anchors ahead toward the offing, and one anchor on the poop, to drop toward the W.N.W., in order to hinder the vessel's drifting during the calm which often succeeds a squall. The last anchor serves to resist the land breeze, which, however, is rare in this season, and not strong in the road at any time of the year.

The harbour of Pernambuco, formed on the coast by the *Recife* which borders the shore, is sufficiently large and deep for receiving a certain number of vessels drawing from 10 to 12 feet of water. This port, as already noticed, is divided into two parts. The first, or exterior port, is named the *Poço*, or *Well*, and is simply an anchorage situate at the head of the reef to the North of the harbour. Its entrance is formed by several rocks or flats of detached madrepores under water, and which are probably a continuation of the principal reef. This entrance is named the *Great Bar*, and on it are from 17 to 30 feet at low water. Within it vessels moor with four fasts, the head to the offing. The ground of the Poço is of sand, and the depth decreases toward the shore. This place is open to the wind from the offing, and the sunken rocks at the entrance render it untenable during the southern monsoon. Its military protection consists of the Forts Bruno and Buraco, standing on the beach at 600 toises or three-quarters of a mile from each other.

The harbour of Pernambuco, or *Port of Recife*, properly so called, is comprised between the kay of rock and the city, and is named the *Mosqueiraõ*. It has from 2 to 3 fathoms of water, and is sheltered from the sea by the Recife. In this place are from 8 to 6 feet at half tide; but for entering they must pass over a bar of sand, on which at low water the depth is not more than 7 feet. This bar is defended by the *Forts Bruno* and *Picaõ;* built, the first on the beach as already noticed, and the other on the extremity of the Recife, to the southward of the lighthouse. The distance of one of these forts from the other is three-tenths of a mile.

The marks for sailing in by the two passages leading into the port of Pernambuco are, 1st, For the Poço, or Well, a small pyramid built on the beach, surmounted by a cross, and called the *Cruz do Patrao*, in a line with the church of *St. Amaro* on the continent, which is surrounded with cocoanut trees. These are a little way up the country, and clearly seen. The bearing of the objects in one is nearly true West. But before the leading mark is brought on, on approaching from the offing, you must avoid the English Bank by observing the precautions already mentioned. From the Poço, or Well, this bank bears nearly East, less than a mile. Its shallow part is indicated by breakers. Having entered, you will see all the interior of the harbour, having the lighthouse to the South, and by proceeding S. by W. [*S.* ½ *W.*] you gain the port of *Mosqueiraõ*.

2ndly. Smaller vessels commonly take, on entering, the pass *immediately to the North of the lighthouse* standing on the Recife; the direction for which, as before shown, is to *bring the two southern* turrets of Fort Bruno in one, and keeping this mark on, with 18 to 15 feet of water, until you see the western or the inner edge of the Recife, with Fort Picaõ to the South, when you proceed along it until you have entered the harbour, and, having advanced to a proper distance, you make fast on the larboard side.

The city of Pernambuco is divided into three parts in the direction of East and West, and separated from each other by the waters of the *Capiribe* and *Biberibe*, but connected by bridges. Pernambuco, the capital of the province of this name, is visited principally for its cotton, which, for its quality and superior preparation, is esteemed as the best in Brasil. The harbour is protected from the violence of the sea by the Recife, the lower parts of which have been raised to the level of the others, like a continued kay. This natural wharf shelters vessels in the harbour from winds in the offing, which are at times very strong, but they rarely cause damage to vessels well moored, though in a basin of small extent.

Navigators find at Pernambuco all kinds of succours. Here they may careen, re-mast their vessels, and repair all damages. They find also all refreshments and supplies of provision and ammunition, but at a price higher than in Europe. The water is good, and easily procured, either at a little way up the Capibaribe to the South, or at Olinda on the North, by means of the waterboats, which take it on board the vessels in the port or in the road. Firewood only is comparatively dear.

The predominant winds in this road are those of the tropic, which may be said to blow generally from S.S.E. to N.N.E., with this variation, that from March to September they approach more from the South (and sometimes even from S.W.) than in the other part of the year. In the latter season they prevail almost without interruption from E.N.E. to N.N.E.

The land breeze, regular in the port, is very light in the road, and is rarely felt beyond the Recife, where the breakers always deaden it; but it weakens or lulls the first winds coming from the offing. The strongest of these, both outside and in the port, are from 10^h a.m. until 5^h p.m., that is, in all the day during the absence of the land breeze.

The temperature (before noticed) is commonly high at Pernambuco, especially during the night, and until 9^h or 10^h a.m.; then, after several moments of calm, which are very oppressive, the sea breeze, rising a little, reaches the coast and refreshes the air, until the moment of sunset. Notwithstanding its heat, the climate of Pernambuco is considered as generally salubrious.

The tides are irregular in the port, probably because the rivers are affected by local circumstances, which increase or diminish the volume of water. The reflux or ebb is, however, perceptible after the sea has ceased to rise, and seems to accord with the lunar influence. The difference of level between high and low water is commonly 6 feet, but it attains 8 feet at the syzigies, and then the strength of the stream in the port is about 2 miles an hour. Under the latter circumstances it is high water at 4^h 30′ p.m., or very nearly so. In the road the tides are always irregular, and the currents are determined by the prevailing winds at sea.

The variation of the compass near Pernambuco, in December, 1819, was 4° 48′ W.; near Cape St. Augustin, 4° 30′.

Remarks on and Instructions for Pernambuco, by a British Navigator, 1835.*

Under favourable circumstances a ship from the eastward, bound to Pernambuco, should get into the latitude of the lighthouse, or 8° 4′ S. By night the revolving light will be seen, as already noticed. On approaching the coast the lead should be used; soundings may be gained at about the time the land is first seen from the mast-head, about 50 fathoms, sandy bottom.

On falling in to the northward of the port, the lighthouse not in sight, care should be taken not to run too far in, or into less than 20 fathoms, until daylight. The town of Olinda, being seated on an eminence, cannot be mistaken. On approaching it in the morning from the eastward its appearance is beautiful. Having Olinda in sight, with its churches and other large buildings, the next objects will be the lighthouse, Fort Picao, Fort Bruno, the shipping, and arsenal, in the port of Pernambuco.

---

* First given in the *Nautical Magazine*, No. 40, which is illustrated with beautiful views of Pernambuco and Bahia.

You now bring the lighthouse to bear W.N.W., and run in upon that direction, thus avoiding the Olinda and English Banks. You may anchor in 8, 7, or 6 fathoms, at 1, 2, or 3 miles from the lighthouse, but do not bring this to bear more to the northward than N.N.W., as within this line the bottom is rocky, and there is a shoal at about a quarter of a mile from the reef.

To a stranger approaching northward of Pernambuco, it should be known that the land will appear verdant as far to the northward as *Itamaraca*, and no appearance of white banks of sand. When abreast of the North end of this island three large cocoanut trees will be seen to the W.N.W. *Olinda* may be seen from the mast-head at the same time to the S.W., and the white fort or battery of *Paõ Amarello*, at 7 miles to the northward of Olinda. Should the wind prevent a vessel from lying along shore on the larboard tack, stand off until midnight or morning, as the wind then is apt to blow at right angles with the shore, which will enable her to gain her port.

If falling in to the southward, about Cape St. Augustine, observe that the land is very remarkable, having ten or twelve cocoanut trees on its summit, and reddish banks of sands. There is also a large building among the cocoanut trees; but the most remarkable objects about this part are some white cliffs, about 3 miles to the northward of the cape. These cliffs are rugged and craggy, and appear like clothes drying at a distance. Olinda will be seen to the N.W.

Should a vessel fall in to the southward of Cape St. Augustine, a large mountain (*Monte Sellada*) will be seen, having the appearance of a saddle, and also two flat mountains, one on each side of the Saddle Mountain, bearing in a westerly direction.

The chapel on an eminence, *N. S. do Rosario*, with its two towers or steeples, between 7 and 8 miles southward of Pernambuco, has been already noticed.

The HARBOUR.—Pilots are generally in waiting to conduct vessels into the port; but should none be ready, get the vessel (if at anchor) under way about two, or one and a half hours before high water. Should the draught be not more than 16 or 17 feet, the *Small or Picaõ Channel* may be used. The leading mark through are the two South turrets of Fort Bruno in a line, as shown in Captain Hewett's survey. This will lead within 20 yards of the rock lying to the North of the lighthouse; but as this rock is steep-to, a vessel may luff close round it, and keep close to the reef, if the wind permits, until within a cable's length of the lower tier of shipping; then drop the larboard anchor, and await the order of the harbourmaster or pilots.

Large vessels discharge and load in the channel between the harbour and English Bank, at about three-quarters of a mile to the N.E. of the lighthouse.

Vessels lie moored in Pernambuco with two anchors down, from the side next the town, and also two ropes or chains to the reef. Four vessels generally lie in a tier, and are sheltered by the reef, which is formed by nature, with the exception of a few stones which have been laid down a little above Fort Picaõ. The water within the harbour is generally smooth, except at the top of high water spring tides, when there is not only a heavy swell, but also a strong current rushing over the reef. In this case good ropes or chains should be fastened to the reef. This lasts about two hours only at each high water during a few days with spring tides.

On leaving Pernambuco great care should be taken not to stand too near the Olinda Reefs, as there are some detached rocks about the outer edges. The greatest danger of coming in contact with these dangers occurs when leaving the harbour late in the afternoon with a wind which prevents sufficient tacking. In daylight, however, there is little to fear, as the broken water can be seen; but after the first tack night may approach, so that the breakers cannot be seen, and also a strong northerly current, according to the wind, which requires caution. The safest way, in this case, is to keep well to the southward.

The marks for clearing the Olinda reefs in the daytime are the *Camona*, or highest church in the district of *Santo Antonio*, open to the southward of the lighthouse; or rather, the church with two steeples, lying a little to the North of the other, which leads a vessel more clear of them. By night, do not allow the light to bear any more to the southward than W.S.W. until Olinda bears N.W. by W. or W.N.W., when a vessel will be at a good distance off shore.

Englishman or English Reef.—The centre of the bank or reef lies about E.N.E. 1⅛ *miles from the lighthouse.* The least water found on it was 13 feet at low spring ebbs;

the ground very rocky and uneven. To clear the bank to the northward keep the highest church in *Boã Vista* open to the northward of the lighthouse. To clear it to the southward keep the southern turrets of Fort Bruno shut in with the lighthouse. The marks from the shoalest part of the bank are the lighthouse and Boã Vista church in a line, and the largest cocoanut tree at Olinda in a line with an old decayed church, the lowest public building in the town.

This bank or reef is not so dangerous as it has been represented, excepting to vessels of large draught, for when vessels are coming out of Pernambuco it is generally high water, when there is a sufficient depth over it. However, when tacking in the bay at low water the former marks must be observed ; as also, when coming to anchor, give it a good berth to the southward, as with strong S.E. winds a very heavy sea sets into the bay. When at anchor too far to the northward a vessel may drive on it before she could be brought up. The sea breaks heavy on the bank with the wind from this quarter, the same as on the Olinda and other reefs. On entering or coming out of the harbour with open boats these breakers should be avoided, if possible, as accidents often occur by the boats getting amongst them.

The pilotage in and out of Pernambuco is very expensive, although the pilots have no branch, yet it is customary for strangers to employ them, and even vessels trading to the port seldom refuse them. They are more serviceable in mooring and unmooring the vessel than in the service which they render in coming in or going out. They have generally a good boat's crew, and some of them are very expert in diving to clear away anything that may be foul of the anchor, a circumstance that often occurs; but there is one charge they make, which is for shifting the vessel down from the discharging berth to that of loading, which could be done without their assistance; still they force their service on you, and under particular circumstances a master is induced to take them.

Vessels loading a sugar cargo in Pernambuco should not load deeper than 14½ feet until they go outside. However, this greatly depends on the wind, for should it be from the S.E. quarter and a good breeze, there is little danger in going over the bar, when drawing 15 or 16 feet, on the height of spring tides.

On leaving the harbour vessels generally begin to unmoor at half ebb, the tide previous to their going to sea, when they have plenty of time to get all their ropes or chains in, and the vessel winded, deck clear, &c. Should the wind be from the S.E., a good breeze, get under weigh one hour before high water, keep at a proper distance from the reef, and make all sail possible; luff close round the rock that lies to the northward off the lighthouse, and observe whether the trees on Cocoanut Island, to the southward, open out to the eastward of the lighthouse ; if they do, the rocks that lie to the northward of this channel will be passed to windward, then there is only the Olinda Reef to be regarded; but should the direction of the wind be such that these rocks cannot be weathered, which can easily be seen by the cocoanut trees not opening to the eastward of the lighthouse (or of the shipping in the harbour), in this case these rocks must be kept on the starboard hand or passed to leeward, and therefore beat through the wide channel, as above directed.

It is to be observed that all these dangers, being to the northward of the lighthouse, are nearly in a direct line with the main reef, so that when the shipping in the harbour are open to the eastward of the lighthouse, a vessel is then clear of them to the eastward, and by having them open to the westward the vessel may run along with safety, passing to leeward of them all. Again, by keeping the shipping in a line with the lighthouse, you would pass on the shallowest part of them.

Should the wind be so that vessels cannot lie along the reef, warping down becomes necessary, and before sail is made they ought to be close down to Fort Picaõ. Masters, or rather pilots, not taking this precaution often get to leeward, a circumstance frequently attended with danger, and which is sometimes fatal. This was the case with the brig *Alcides*, which was wrecked in 1832 abreast of Fort Bruno.

When ships are obliged to anchor outside previous to their entering the port, which is generally the case, the masters usually go in with a boat, either to the royal wharf, or else alongside of a visit boat, with one mast and flag, lying inside the reef, a little above the lighthouse. The cargo is generally brought off in boats, or large launches, and attended with very little risk, as the distance is not great and not much swell. From this advantage and the regular sea breeze, the wall formed by nature, and its strong guns for mooring posts, that are proof against any accident that may occur, and the

You now bring the lighthouse to bear W.N.W., and run in upon that direction, thus avoiding the Olinda and English Banks. You may anchor in 8, 7, or 6 fathoms, at 1, 2, or 3 miles from the lighthouse, but do not bring this to bear more to the northward than N.N.W., as within this line the bottom is rocky, and there is a shoal at about a quarter of a mile from the reef.

To a stranger approaching northward of Pernambuco, it should be known that the land will appear verdant as far to the northward as *Itamaraca*, and no appearance of white banks of sand. When abreast of the North end of this island three large cocoanut trees will be seen to the W.N.W. *Olinda* may be seen from the mast-head at the same time to the S.W., and the white fort or battery of *Paõ Amarello*, at 7 miles to the northward of Olinda. Should the wind prevent a vessel from lying along shore on the larboard tack, stand off until midnight or morning, as the wind then is apt to blow at right angles with the shore, which will enable her to gain her port.

If falling in to the southward, about Cape St. Augustine, observe that the land is very remarkable, having ten or twelve cocoanut trees on its summit, and reddish banks of sands. There is also a large building among the cocoanut trees; but the most remarkable objects about this part are some white cliffs, about 3 miles to the northward of the cape. These cliffs are rugged and craggy, and appear like clothes drying at a distance. Olinda will be seen to the N.W.

Should a vessel fall in to the southward of Cape St. Augustine, a large mountain (*Monte Sellada*) will be seen, having the appearance of a saddle, and also two flat mountains, one on each side of the Saddle Mountain, bearing in a westerly direction.

The chapel on an eminence, *N. S. do Rosario*, with its two towers or steeples, between 7 and 8 miles southward of Pernambuco, has been already noticed.

The HARBOUR.—Pilots are generally in waiting to conduct vessels into the port; but should none be ready, get the vessel (if at anchor) under way about two, or one and a half hours before high water. Should the draught be not more than 16 or 17 feet, the *Small or Picaõ Channel* may be used. The leading mark through are the two South turrets of Fort Bruno in a line, as shown in Captain Hewett's survey. This will lead within 20 yards of the rock lying to the North of the lighthouse; but as this rock is steep-to, a vessel may luff close round it, and keep close to the reef, if the wind permits, until within a cable's length of the lower tier of shipping; then drop the larboard anchor, and await the order of the harbourmaster or pilots.

Large vessels discharge and load in the channel between the harbour and English Bank, at about three-quarters of a mile to the N.E. of the lighthouse.

Vessels lie moored in Pernambuco with two anchors down, from the side next the town, and also two ropes or chains to the reef. Four vessels generally lie in a tier, and are sheltered by the reef, which is formed by nature, with the exception of a few stones which have been laid down a little above Fort Picaõ. The water within the harbour is generally smooth, except at the top of high water spring tides, when there is not only a heavy swell, but also a strong current rushing over the reef. In this case good ropes or chains should be fastened to the reef. This lasts about two hours only at each high water during a few days with spring tides.

On leaving Pernambuco great care should be taken not to stand too near the Olinda Reefs, as there are some detached rocks about the outer edges. The greatest danger of coming in contact with these dangers occurs when leaving the harbour late in the afternoon with a wind which prevents sufficient tacking. In daylight, however, there is little to fear, as the broken water can be seen; but after the first tack night may approach, so that the breakers cannot be seen, and also a strong northerly current, according to the wind, which requires caution. The safest way, in this case, is to keep well to the southward.

The marks for clearing the Olinda reefs in the daytime are the *Camona*, or highest church in the district of *Santo Antonio*, open to the southward of the lighthouse; or rather, the church with two steeples, lying a little to the North of the other, which leads a vessel more clear of them. By night, do not allow the light to bear any more to the southward than W.S.W. until Olinda bears N.W. by W. or W.N.W., when a vessel will be at a good distance off shore.

Englishman or English Reef.—The centre of the bank or reef lies about E.N.E. 1⅛ *miles from the lighthouse.* The least water found on it was 13 feet at low spring ebbs;

the ground very rocky and uneven. To clear the bank to the northward keep the highest church in *Boā Vista* open to the northward of the lighthouse. To clear it to the southward keep the southern turrets of Fort Bruno shut in with the lighthouse. The marks from the shoalest part of the bank are the lighthouse and Boā Vista church in a line, and the largest cocoanut tree at Olinda in a line with an old decayed church, the lowest public building in the town.

This bank or reef is not so dangerous as it has been represented, excepting to vessels of large draught, for when vessels are coming out of Pernambuco it is generally high water, when there is a sufficient depth over it. However, when tacking in the bay at low water the former marks must be observed; as also, when coming to anchor, give it a good berth to the southward, as with strong S.E. winds a very heavy sea sets into the bay. When at anchor too far to the northward a vessel may drive on it before she could be brought up. The sea breaks heavy on the bank with the wind from this quarter, the same as on the Olinda and other reefs. On entering or coming out of the harbour with open boats these breakers should be avoided, if possible, as accidents often occur by the boats getting amongst them.

The pilotage in and out of Pernambuco is very expensive, although the pilots have no branch, yet it is customary for strangers to employ them, and even vessels trading to the port seldom refuse them. They are more serviceable in mooring and unmooring the vessel than in the service which they render in coming in or going out. They have generally a good boat's crew, and some of them are very expert in diving to clear away anything that may be foul of the anchor, a circumstance that often occurs; but there is one charge they make, which is for shifting the vessel down from the discharging berth to that of loading, which could be done without their assistance; still they force their service on you, and under particular circumstances a master is induced to take them.

Vessels loading a sugar cargo in Pernambuco should not load deeper than 14½ feet until they go outside. However, this greatly depends on the wind, for should it be from the S.E. quarter and a good breeze, there is little danger in going over the bar, when drawing 15 or 16 feet, on the height of spring tides.

On leaving the harbour vessels generally begin to unmoor at half ebb, the tide previous to their going to sea, when they have plenty of time to get all their ropes or chains in, and the vessel winded, deck clear, &c. Should the wind be from the S.E., a good breeze, get under weigh one hour before high water, keep at a proper distance from the reef, and make all sail possible; luff close round the rock that lies to the northward off the lighthouse, and observe whether the trees on Cocoanut Island, to the southward, open out to the eastward of the lighthouse; if they do, the rocks that lie to the northward of this channel will be passed to windward, then there is only the Olinda Reef to be regarded; but should the direction of the wind be such that these rocks cannot be weathered, which can easily be seen by the cocoanut trees not opening to the eastward of the lighthouse (or of the shipping in the harbour), in this case these rocks must be kept on the starboard hand or passed to leeward, and therefore beat through the wide channel, as above directed.

It is to be observed that all these dangers, being to the northward of the lighthouse, are nearly in a direct line with the main reef, so that when the shipping in the harbour are open to the eastward of the lighthouse, a vessel is then clear of them to the eastward, and by having them open to the westward the vessel may run along with safety, passing to leeward of them all. Again, by keeping the shipping in a line with the lighthouse, you would pass on the shallowest part of them.

Should the wind be so that vessels cannot lie along the reef, warping down becomes necessary, and before sail is made they ought to be close down to Fort Picaõ. Masters, or rather pilots, not taking this precaution often get to leeward, a circumstance frequently attended with danger, and which is sometimes fatal. This was the case with the brig *Alcides*, which was wrecked in 1832 abreast of Fort Bruno.

When ships are obliged to anchor outside previous to their entering the port, which is generally the case, the masters usually go in with a boat, either to the royal wharf, or else alongside of a visit boat, with one mast and flag, lying inside the reef, a little above the lighthouse. The cargo is generally brought off in boats, or large launches, and attended with very little risk, as the distance is not great and not much swell. From this advantage and the regular sea breeze, the wall formed by nature, and its strong guns for mooring posts, that are proof against any accident that may occur, and the healthiness of the climate, this port may be considered one of the safest and best on the Brasilian coast.

Here it is high water, on the full and change, at 4h 30′. The vertical rise of spring tides is 8 feet, and of neaps 5 feet. The highest tide is generally two days after the full and change.

II.—PERNAMBUCO TO BAHIA, OR THE BAY OF ALL SAINTS, INCLUSIVE.

Cape St. Augustin, with its trees, red cliffs, church, &c., have been already noticed. In the bay of Gabu, northward of this cape, there is anchorage within musket shot of the shore, having a passage to it formed by the reefs.

The total distance from Pernambuco to Cape St. Antonio of Bahia is 376 miles, and the mean *true* direction is about S.W. ½ S. Near the Road of Pernambuco the variation of the compass is 4° 45′ W., but it diminishes to the southward, and near Bahia is only 2° W.

The distance from *Pernambuco* to the *Point Meracahipe* is 30 miles, and the trend of the intermediate coast, *true*, is S. 15° W.

From *Point Meracahipe* to *Porto Calvo* is 44 miles, and the mean direction of the intermediate coast, *true*, is S. 27° W.

From *Porto Calvo* to the mouth of the *Rio Sibahuma* the distance is 248 miles, and the intermediate direction, *true*, S. 38° W.

From the *Rio Sibahuma* to the point of *Itapuan*, nearly on the parallel of the little *Mount Massarandupio*, is 47 miles; direction of the intermediate coast, *true*, S. 44° W.

From the *Point of Itapuan* to *Cape St. Antonio of Bahia* the distance is 10½ miles, and the mean direction of the coast, *true*, W. 15° S.

From Cape St. Augustin,[*] southward, the coast continues to be fronted by the Recife and other reefs, and without which are gradual soundings to the distance of about 2 leagues. In coasting along there may be found, in 15 or 16 fathoms, good anchoring ground, of white sand; the same ground may be found in 8 fathoms; but, in a less depth, the bottom is generally of rock and shells.

The Point of Meracahipe, 4 leagues to the southward of Cape St. Augustin, is level with the sea, covered with wood, and at a distance appears inundated. When at sea, to the eastward of this point, you will, however, see an inland ridge of high ground, extending North and South, which has a break or dip in the middle, dividing it into two round knolls, and called *Serra Sellada*, or *Saddle Hill*, from its resemblance to a saddle. This mountain stands in lat. 8° 25′, lon. 35° 11′, and in all the country hereabout a similar one is not to be seen, nor one so high, all others being level, and covered with low brushwood. When just open to the southward of Cape St. Augustin this mount may be seen bearing W. by S. [*S. 75° W.*], and when in a line with Point Meracahipe it bears nearly N.W. by W. [*N. 59° W.*]

From *Cape St. Augustin* to *Point Meracahipe*, and still farther southward, the land is low, level. and covered with brushwood. The coast has a white sandy beach, bordered with a reef.

Above the point of Meracahipe is an hermitage, and between Cape St. Augustin and this point are successively the small hamlets of *Maracay* and *Gallinhas.*

The little islets of *St. Aleixo* lie in lat. 8° 35′ 49″, nearly off the entrance of the little river of Serenben; at 1½ leagues to the southward of which is another little river, *Rio Fermosa.*[†] The two islets in a line bear N. 60° W. *true.* There is no passage between them and the land, near to which they lie. To the N.W. of the islets, and at several leagues inland, may be seen the *Serra Sellada*, above described: and at several miles to the East of them Cape St. Augustin may be distinctly seen, as it bears from them N. 18° E. *true*, 16 miles.

---

[*] The town of St. Augustin is a flourishing place, with a population of 1,500 souls.—*Mr. Cowper*, 1846.

[†] Upon this river is a town of the same name, the commerce of which is considerable; its population is about 2,000.—*Mr. Cowper.*

Captain Monteath passed the islets on the 20th of December, 1825, at the distance of three-quarters of a mile; the soundings regularly decreasing from 12 to 10 fathoms, clayey bottom.

TAMANDARE.—At about 3 leagues to the S. by W. from the islets of St. Aleixo is the little *Port Tamandare*. It is against an opening in the reef which forms an anchorage, and which is larger than most of the openings of this nature. The space and the depth are sufficient for large vessels, and the coasters say is will accommodate three or four frigates. The depths are from 4 to 6 fathoms. A fort on the coast defends the entrance and interior anchorage. The position of this fort is given by the Baron Roussin as lat. 8° 43′ 24″, lon. 35° 5′.

The roadstead of Tamandare is the best place for shelter between Pernambuco and Bahia, yet it is exposed to all winds of the segment from South to N.E. by E., and vessels are not protected from the sea by the reef; for it, in several places, is very little above the level of the water.

In proceeding along the coast, from N.E. to S.W., you pass successively before the bars of *Camaragibe*, *St. Antonio*, and *St. Antonio Mirim*, which admits jangadas only. On the parallel of 9° S. is the *Barra Grande*, and in 9° 11′ *Port Calvo*, where rivulets facilitate the transit of goods, but have no depth at the entrance.[*]

PORTO CALVO is small, but will admit vessels of 120 tons, and may contain six of that description. The town of Porto Calvo, upon the Una, is now a small place with large houses, and a *city-like appearance*. It suffered much in the rebellions, and contains about 2,000 inhabitants. It still carries on some trade, and appears to be gradually recovering its former prosperity. Along the coast, at the distance of about half a league, is a ledge of reefs, having an interval which constitutes the entrance, and which has a depth of 5 and 6 fathoms. Within is a depth of 3 and 4 fathoms. Strangers must cautiously proceed with the lead, and will find, when within, that the water is smooth, with bottom of sand.

The name of BARRA GRANDE, given to an inlet situate to the N.E. of Porto Calvo, as shown on the chart, may induce a stranger to suppose that it is a fine harbour. We have, therefore, to notice that it has only 3 fathoms, with reefs to seaward, and a flat rock, covered with water. Its distinguishing mark is the high land of St. Bento, on the South side, and above it, the church of St. Bento.

From PORTO CALVO to the RIO CAMARAGIBE, 3 leagues to the S.W., the land is level, with low brushwood; the reefs half a league from the coast; the beach of white sand. On the South side of the Camaragibe, stretching along shore, is a range of bare hills, or cliffs of red sand.

Near the river St. Antonio-mirim (or Little St. Antonio) is a range of red cliffs, half a league in length, and three small round hills, which stand on its northern side.

MACEIO, or MAÇAYO.—The next place of any consequence on this coast is MACEIO, or MAÇAYO, a village situate on the western side of a wooded bluff. Here the shore trends in an East and West direction, and upon it, to the South of the village, is a small fort near the mouth of a rivulet; before it is an open roadstead, protected on the East by reefs of coral, but which are covered at high water. The place has been surveyed by Captain the *Hon. F. F. de Roos*, R.N., who places the fort in 9° 40′ S., and 35° 41′ W.

There is a powder magazine on the wooded bluff East of the town, which is white, and may be seen at 4 leagues off. On advancing nearer, the church will be seen. The anchorage is good in 5 fathoms, sand and clay, with the town and fort nearly in a line, and bearing N.N.W. at three-fifths of a mile from shore.

---

[*] Mr. Cowper, in proceeding along the coast, says:—"He passed the dangerous quicksands of the Menon river on horseback, the village and river of Pioca, the bar, river, and village of St. Antonio, and some most beautiful cretaceous cliffs, the only break to the monotony of sandhills which he had seen on the coast of Brasil; they are about 100 feet high, of a blue and white colour, ruptured occasionally into deep, picturesque ravines. At this point he left the coast, and proceeded up the Camaregibe to a bustling little commercial town called the Passo de Camaregibe, with about 1,000 inhabitants. Good building timber of various kinds grows in its neighbourhood.

"The exportation of timber is, however, prohibited, except under special license from the imperial government, which is not conceded for ship building timber."

The outer point, East of Maceio, is the *Ponta Verde*, or *Green Point*, which is covered with cocoa trees, with breakers over its rocky extremity. To those approaching from the N.E., Maceio is hidden by this point; but on rounding the reefs to the westward it comes in sight. At a mile from all this coast are found 10 fathoms of water, bottom of madrepores, and the depth appears to increase gradually to the distance of 4 to 6 leagues, where there are from 25 to 30 fathoms; and in fine weather a vessel may anchor on almost any part of the bank.

To the northward of Maceio, far up the country, are seen the *Serras de Marambaya*, a chain of mountains discernible at 15 leagues off, and are conspicuous over the adjoining land, which has no distinguishing mark. The country here is very fine; the coast generally of sand, frequently covered with cocoanut trees, and small portions of a steep, reddish shore. The middle of the mountains of Marambaya is in lat. 9° 25′.

The village of Juragua, amidst cocoanut trees, occupies the shore from the Fort of Maceio, above mentioned, to another fort at the distance of a mile to the East. The coast between forms a curve, and is very low. At a mile to the southward of the eastern fort is a *Baixo*, or detached shoal, which breaks with a high southerly wind. Good water may be obtained here.

It is high water here, on the full and change, at 4h 30′. Spring tides rise 8½ feet. Variation of the compass, 4° West, 1832.

The port of Maceio is protected by a reef of rocks, visible at ebb tide. The beach within it forms a semicircle of white sand. Immediately back from the beach are a row of white houses, with here and there groves of coqueiros, bearing fruit. Upon the hill above stands the city of Maceio, with a population of about 3,000. There is not a convenient landing place in its harbour.

In 1844 Maceio contained two churches, in miserable repair, and two more in the process of erection, but no convents. Its other public buildings were a theatre, a government house, barracks for soldiers, and a camara municipal. The theatre was ornamented outside with rude crosses and forms representing stars and circles; apparatus for illumination was affixed to all these ornaments. Notwithstanding various evidences of popular interest in this edifice, it stood open and apparently deserted, one of its sides having yielded to the force of gravitation, or having been pulled down for repairs. Most of the houses in Maceio are built of *taipa*, and, with one or two exceptions, do not exceed a single story in height. Children who are *not free* run about naked: free women employ themselves in lace making. The shops are described as wretched. The place altogether is described as dull and uninteresting. There is an English and foreign burying ground, but Mr Kidder says, "its gate, made of wood, had been suffered to decay, and fall in pieces, and thus the enclosure was left open and desolate. Many of the houses in the extremities of the town are very small, and covered only with a thatch of the cocoa palm leaves."

The exports of the province of Alagoas are chiefly sugar, cotton, hides, Brasil wood, and rosewood. Sugar, in large cases, is brought from the interior, upon rude carts, drawn severally by six or eight oxen. The cotton comes in bales of about 180 pounds each. Of these a horse carries one on either side of a pack saddle. Mules have not yet been introduced into this region as beasts of burden, although it is thought they would be more serviceable than horses. Of late the greater proportion of the productions of the province has been exported by way of Bahia and Pernambuco. Formerly foreign shipments were more frequent, and a greater number of foreigners resided in the place.

The following remarks on the port of Maceio, by the Hon F. F. de Roos, were originally given in the *Nautical Magazine, April*, 1835.

"On approaching Maceio, when at the distance of 12 or 14 miles, a small white building can clearly be made out. It is a powder magazine, and is situated on a wooded bluff, which overlooks the town and harbour. The land may also be distinguished by a red spot on the face of the cliff, about 5 miles to the south-west, and by a white chapel, with two towers, in the same direction: moreover, Mount Barriga, at a distance in the interior, may be observed. It stands alone, and is higher than the land which forms the coast, but is otherwise not remarkable.

"*Maceio, being the only* convenient anchorage between Bahia and Pernambuco, enjoys a considerable commerce, and has an extensive communication with the interior. Many English vessels annually touch here. Supplies are to be had at a moderate rate, and excellent water can be obtained in the adjoining harbour of Paijucara, at a well near the beach.

"The port is formed by the point of the Barrier Reef, terminating abruptly, which extends along the shore here, a sandy beach, forming the continuation of the coast for some miles to the southward. It is an open bay, but affords protection from the prevailing winds, which blow from N.N.E. to E.S.E. throughout the greater part of the year.

"The men who fish in the jangadas, or sailing rafts, which are constantly to be met with on this coast, are good pilots; but there is a regular harbourmaster at the village of Jurugua, who will come off to bring ships, on their firing a gun.

"The anchorage of H.M. sloop *Algerine* was in 5¼ fathoms, the end of the reef bearing S.E., and the covered wharf, or trapiche, E. 58° N., by compass. From this anchorage the sea is open from S.E. to S.W. ¼ W., bottom sand and clay; a quarter of a mile in the direction of trapiche are moorings laid down for the trading packets from Pernambuco and Bahia, which call every fortnight.

"Persons acquainted with the port generally approach it, keeping within a quarter of a mile of the reef, and in this manner rounding the point; but strangers are not recommended to do this, as the soundings are irregular, and the Baixo, with only 15 feet of water on it, is to be avoided. The safe rule is not to bring the powder magazine to the eastward of North, till you have passed the point of the reef; you may then haul into your anchorage.

"In the nine summer months this port may be deemed safe, but in June, July, and August, when the southerly winds prevail, it is very much exposed. No English merchant vessel has ever been wrecked here, though one brig, not long since, drove and bumped her rudder to pieces in a southerly wind. Instances of Brasilian wrecks frequently occur.

"There is an adjoining harbour (to the East), formed by the same reef. called *Paijucara*, which affords shelter to small vessels only. It is shaped like a basin, the entrance being near the centre. It is very shallow, and seldom used, as with the wind to the northward of N.E., a vessel cannot fetch in. One corvette and two brigs of war have been built in Paijucara."

In some remarks on Maceio by Captain Drinkwater, R.N., it is noticed that the land to the northward is of moderate height, abounding in red cliffs. H.M.S. *Doris* anchored in 8 fathoms, rock, and broke the anchor in heaving up three hours after. A little farther in the bottom is clearer, as seen by the sludge. A swell sets in continually.

ALAGOAS.[*] The bar of *St Miguel das Alagoas* (of the lakes) is the mouth of a small river which comes from the N.W., and on the northern border of which is the little town of *Sta. Anna.*[†] It is under this town that the coasters go to take charge of the sugar, cotton, and building wood produced in the country, and brought from the adjacent heights; several roads for the conveyance of which may be seen.

---

[*] The small province of Alagoas was formerly included within the limits of Pernambuco, but was cut off from the latter, in order to reduce the province of the Pernambucans, of whose independent spirit Rio de Janeiro has been always jealous. Alagoas derives its name from the lagoon, on which stood its old capital. The coast is very flat, with sandy beaches interrupted by red clay cliffs, 80 to 90 feet high. Maceio, the capital, is 52 leagues to the South of Pernambuco. Mr. Cowper, the British consul at the latter place, who visited Maceio in January, 1846, says, the town is well built, and contains about 5,000 inhabitants; and that the port is sufficiently extensive. The trade of this place consisted, in 1845, in exporting produce, to the value of about £112,000 sterling, exclusive of Brasil wood (of which the crown has a monopoly), to the estimated value of about £12,000 sterling. The direct European imports of manufactured goods amounted in value to £8,250 sterling (all from Great Britain); and of the exports, the value of about £95,000 sterling was exported in British vessels; twenty-five British vessels entered the port, and five belonging to other countries. A revolution had previously broken out in the province; it was suppressed, but not until the place was sacked by the party called the *Sisos*, or *Smoothers*, who were then established in Pará; the president of which has put down the press. The mere legislation of the province is considered a farce. Immense quantities of oysters abonud in the lake of Alagoas, and constitute a cheap article of food. Some parts are very deep, but generally the water is shallow. The land around the lake is devoted to the cultivation of sugar, with here and there a small town or provoçaos.

[†] Alagoas is situated on a picturesque hill on the borders of the lake, but grass is growing in the streets, and it is rapidly falling to decay. Its population is about 8,000.—Mr. Cowper, 1848.

The Bar of St. Miguel admits very small vessels only. The same is the case with *Porte Francez*, a small anchorage at about 2 leagues more to the North, against the hamlet of *Remedios*, and at the base of the *Point Massaveiro*, forming the South side of a large valley occupied by the Rio das Alagoas, and by the two lakes which give their name to that river. Craft drawing 6 feet water may enter Porto Francez, the only point of communication from the lakes to the sea. The larger coasters stop in the exterior anchorage for receiving, by the jangadas, the merchandise of the country.

JIGUIA.—At 5 leagues to the south-westward of Rio St. Miguel, in about 10° 2′ S., is the bar of *Jiguia*. The coast between is about 80 feet in height, nearly horizontal, and terminating on the sea by several reddish cliffs; the interior, which is woody, presents an agreeable aspect.

The *Bar of Jiguia* is not always navigable for the coasters, and they more frequently anchor outside; but, with high tides, it allows the passage of the smacks, of 80 tons, built from the abundant wood produced on the sides of the river.

On proceeding southward from Jiguia you pass the mouth of the little *River Poxim*, on which is the village of *Conceiçao*, and at the distance of 4 leagues thence is the bar of *Cururippe*, off which, at the distance of about 3 miles, is a rock, named *Dom Rodrigo*, which is probably connected to the chain of reefs. On other parts of this coast you may approach to the distance of 2 miles, where there is generally from 10 to 13 fathoms of water.

THE RIO SAN FRANCISCO is a broad and rapid river, but shallow, especially at its entrance. Pimentel says that it is subject to great inundations in the months between September and March; and that, during this season, its current is so strong that it cannot be stemmed by an eight-oared barge. Small craft only can enter it, partly owing to the rapidity of its stream, and partly to the shoals at its entrance. The point *Manguinha*, at the mouth of the river, is situate, according to the Baron Roussin, in lat. 10° 28′ 50″, lon. 36° 21′ 15″.

The intermediate land between the Alagoas and Rio San Francisco is low and sandy; the shore, bordered by the Recife, presenting small openings and inflections, known to the coasters only.

The entrance of the river is bordered on the South by the point Manguinha, a low, flat point covered with mangroves. It projects to the E.S.E., and heavy breakers extend seaward 1½ miles. The North point, also very low, is of quicksand, without vegetation; the coast northward of it is of the same nature, and there are breakers as on the South. The passage in is between the breakers, and vessels anchor before it in order to engage a pilot, whose assistance is indispensable.

According to the pilots the mouth of the river has a depth of 12 or 13 feet at high water. The country here is very populous, and abounds in sugar, cotton, building wood, tobacco, &c. The most considerable town of the vicinage is one called *Penedo*.

The Rio de San Francisco takes its source near the Villa Rica, about 80 leagues to the W.N.W of Rio Janeiro; it is one of the largest rivers in Brasil, and is described as navigable in the greatest part of its course. It extends from the South to the North, in nearly a parallel direction with the coast; but, traversing a flat country to the approaches of its mouth, it loses both depth and strength.

At about 2 leagues to the W.S.W. from the mouth of the Francisco may be seen a small opening on the shore, called by the country people *Barra Nova*. There is a discharge from the river during the wet season, but even then it is not navigable.

From the Rio San Francisco, to the S.W., the coast continues to be very low; but we now come in sight of the great inland mountains *Pacatuba* and *Itabayanna*; the latter being to the West in about 10° 50′ South, and its highest summit is stated to be in 10° 47′ 10″ South, lon. 37° 23′.

Here it becomes dangerous to approach too near the shore, as with a strong south-easterly wind it would be difficult to gain an offing. The beach is flat, and the bottom near it of stiff sand, in which the anchors hold firmly: but this should not induce a vessel to come too near. At the distance of between 3 and 12 miles from land the depth increases to 26 fathoms, with the exception of a spot 6 miles to the South of Rio Francisco, where 30 fathoms have been found.

The **RIVER COTANDIBA**, which winds far up into the country between the mountains, lies on the parallel of 11° South. At a short distance within its entrance it receives the waters of several smaller rivers; but it has not more than 6 or 7 feet of water on the bar: nevertheless it is much frequented by the coasters for the products of the country, as sugar, cotton, tobacco, &c.

When you have brought the bar to the West, you will descry the Mount *Aracaju* at several leagues to the N.W., and to the West is the high land called the *Morro de Telha*. The first is remarkable from its form in the direction of the coast, with a cut or opening at its northern extremity: the second is in form of a cardinal's hat.

VASABARRIS, or RIVER of SERGIPE.[*]—The Bar of the Vasabarris, or River of Sergipe, is 10 miles south-westward from that of the Cotandiba. When advancing to this place, from the East or the South, you may see three small hills, of equal size, covered with bushes, situate about 3 leagues to the S.W. of the entrance, and which are named *os Tres Irmaõs*, or the *Three Brothers*. The town of Sergipe, built at the foot of these hills, on a conflux of this river, has given its name tó the stream.

The mouth of the river is formed on the South by a long point of white sand, and is, as well as the North point, encompassed by violent breakers, which render an entrance into it very difficult. Under the most favourable circumstances the channel has only 10 or 12 feet of water. The South point of the entrance is in lat. 11° 10′ 30″, lon. 37° 9′.

RIO REAL.[†]—The mouth of the Rio Real is 7 leagues S.S.W. from that of Vasa-

---

[*] The PROVINCE OF SERGIPE DEL REY derives its name from the River Seregipe, an aboriginal name, on which St. Christovao, the capital, was first established, but removed afterwards to another situation. Its conquest and colonization were commenced in 1590, and was granted to Christovan de Barros, the deputy governor of Bahia, as a reward for his services in reducing the natives. It was long considered a district of Bahia, but had its *ouvidors* about the year 1696. Having less natural advantages for commerce, this province has not made the same progress as the other maritime captaincies. Along its coast there are no capes, islands, or good ports. Its rivers have bars which are generally more or less dangerous, and afford little shelter, except to small vessels. The surface of the province is generally flat, there being scarcely a hill or mountain of any considerable elevation. The Sierra Itabajanna, between the Rio Real and the Vazabarris, which, though more than 20 miles from the coast, is visible at a great distance from the sea. Valuable Brasil and other woods grow on this serra. Cazal divides the province into eastern and western. The former, in consequence of its woods, is called *Mattas;* the latter, which includes the larger portion of territory, has acquired, from the sterility of its soil, the denomination of *Agrestes:* the eastern part of the province yields sugar and tobacco, and the western is chiefly devoted to rearing cattle. A few *aldeias* on the River San Francisco, its northern boundary, are the most cultivated spots. In the eastern part four settlements have been named towns, besides Sergipe or St. Christovao, which, being the capital, ranks as a city. It is situated on an elevation near the River Paramopama, an arm of the Vazabarris, 18 miles from the sea. *Sumacas* ascend to it, and take in sugar and cotton. It contains one or two convents, two chapels, a misericordia, a townhouse, and a large bridge, all built of stone: it has plenty of good water. But the most populous and the busiest settlement in the whole province is or was, some time ago, the *povoaçao* of Estancia, 5 leagues from the sea, on the River Piauhy, which falls into the Rio Real, by which sumacas ascend to it. None of the rivers are navigable for large vessels, and the entrances of all are dangerous.

The commerce and industry of Sergipe and Bahia are so intimately connected, that the following statement by the French consul of establishments, &c., in 1843, includes both, viz., 728 sugar engenhos, 172 distilleries, seven snuff and fifty-five cigar manufactures, one paper, four soap, four candleworks, one cotton factory, seventy-eight saw-mills, eleven ship-yards, nine printing presses, and ten newspapers.

[†] The PROVINCE OF BAHIA, including the old captaincy *dos Ilheos*, extends from the Belmonte to the Rio Real, which divides it from Sergipe del Rey, being about 300 miles in length. On the West and north-west it is separated by the River San Francisco from Pernambuco; while, on the south-west, it bounds on Minas Geraes. It is divided, like Pernambuco, into the comarcas of Bahia, Ilheos, and Jacobina, the former two comprising the coast, and the latter the western part of the province.

With the exception of the descriptions of Prince Maximilian, and Mr. Henderson, which in many instances are now obsolete, we have but little satisfactory information respecting the interior of this province. Mr. Kidder confines his account chiefly to the city of Bahia, and the British consul has not transmitted any accounts of the internal parts. Travelling across the province from Ilheos to Minas Geraes, primeval forests, mountains, hills, and plains are traversed. There are scattered villages during the route, and canoes ascend, though with barris. This is a river which proceeds, in a long course, from the interior, and inland is divided into many branches. Seen from the offing, the mouth presents nothing remarkable, but the breakers on each side. A strong current sets outward from the river.

The southern point, called *Mango Secco*, is an extension of a beach of white sand, called by the pilots the *Prancha*, or Plank of Rio Real. Within the bar the river turns to the S.W., and afterward receives a number of others. From sea, at about 2 miles off, are seen a number of huts in the environs of the bar; over the latter there are said to be only 15 feet of water, with high tides. The swell is heavy, and the passage always dangerous, and to be attempted only by the boats and pilots of the country.

All the coast extending from the Rio St. Francisco to the Rio Real is low, sandy, partly covered with bushes, and variagated with little woody hills. The ground without the *Recife*, or line of rock, is generally clean, and between 2 and 10 miles off the depths are from 9 to 30 fathoms, bottom of oaze, sand, and broken madrepores. The last quality of bottom is generally the farthest from shore.

ITAPICURU.—At 7 leagues S. 30° W., *true*, from the bar of the Rio Real, is that of the *Itapicuru*, which is of less consequence. According to the pilots it has only 7 or 8 feet over it with high tide, and it is obstructed by breakers, which render an access dangerous; no distinguishing marks being seen from the offing. On bringing it to the West the opening may be seen between downs on the right and left, and there is a hamlet on the South side at some distance within the entrance. The only vessels which enter are the decked boats and jangadas or rafts of the country, which are insubmersible.

From the Bar of the Itapicuru the coast trends in a more southerly direction to and beyond the parallel of 12°. A series of small hills, called the *Oiteros de San Miguel*, borders the coast, commencing at 6 or 7 miles from the Bar of the Itapicuru. Nothing remarkable is seen on the coast for a distance of nearly 20 leagues, except the little mount *Massarandupio*, in 12° 24′ S., eastward of which several rivulets fall into the sea. Along the greater part of the coast are the reefs, and a strand of white sand.

In the bay formed by the coast between the Rio San Francisco and the Rio de Sergipe, the sea, in all seasons, rolls violently inward; and more particularly when the wind sets in upon the coast. Many ships have been lost here; and, as it is so dangerous, all who pass should keep off to a sufficient distance.

In lat. 12° 32½′, lon. 37° 58½′, is the tower of *Garcia da Vila*, the most remarkable object of this part of the coast; it is a sort of fort, on the rising land, situate among trees, and having a signal post. All the shore may be approached to the distance of a mile, in 11 to 14 fathoms, bottom of sandy oaze and broken madrepores or coral. The depths increase quickly, and at 10 miles off there is no bottom at 40 fathoms. In lat. 12° 30′ no bottom is to be found at 60 fathoms, 8 miles off.

From the tower of Garcia da Vila the coast trends S.W., to the point of *Itapuan*, on an extent of 11 leagues, and presents nothing but sandy downs, varied only by bushes and cocoanut trees. The Recife, or border of rocks, continues all the way, and many are always above water, appearing like islets; those, in particular, about Point Itapuan are seen detached from the coast. In this parallel, lat. 13°, at 12 miles off no bottom is to be found at 100 fathoms.

The *Baron Roussin* says that on all the extent of coast between the parallels of 10° and 13° we have found that the winds of the northern monsoon have daily variations, a knowledge of which is useful to those bound northward. During the night the land breeze ceases; but this is seldom felt beyond the reefs. On the approach of day, however, the

---

great difficulty, and often danger, some of the rivers. Cultivation is not described in a flourishing condition in the province, although it is susceptible of the greatest extension and prosperity.

Its commerce is represented both by the British and French consuls, and by Mr. Kidder, to have been for some years on the decline. The British consul considers the diminished importation of flour (about one-half) as one indication of decline in the means of the inhabitants. The diminished sale of European manufactures he attributes to the same cause, and to the failure of agricultural crops, and he attributes the consequences of the revolutions of 1837 and 1838 as other causes. The trade of Bahia has also lost much of the exports of Sergipe and Alagoas, where the merchants of Pernambuco have formed branches of their commercial establishments. It will appear, however, that the trade of Bahia is rather stationary than *retrograding.*

breeze freshens and blends with the winds of the offing, which seem attracted by the North coast toward noon: after this hour the wind becomes more easterly, so as to make an angle of about two points of the compass between that of the morning and that of the evening. It follows that the borders are affected by these varieties, of which advantage may be taken.

BAHIA, OR BAY OF ALL SAINTS.

[BAHIA DOS TODOS OS SANTOS.]

From the Point Itapuan the coast trends nearly W.S.W., 11 miles, to Cape St. Antonio at the entrance of *Bahia*, or the *Bay of All Saints*. This cape is distinguished by a light tower, hereafter noticed. At 2½ miles, East several degrees South, from the light tower is another point, on which is a lookout and signal station; this point is the southernmost of the promontory of Bahia, and it forms, with that called *Itapuanzinho*, at a mile more to the East, a small bay or cove, occupied by an armaçaõ, and defended by the rocks. Some habitations are remarkable on the coast about the cape, but landing is difficult. Here the Recife, or border of reefs, terminates.

BAHIA, or BAY of ALL SAINTS.—Bahia de Todos os Santos, the Bay of All Saints, was discovered in 1503 by Americus Vespucius, under the patronage of the King of Portugal, Don Manoel. Vespucius carried home from the coast of Santa Cruz, as the newly discovered country was first called by the Portuguese, a cargo of *ibiripitanga*, the dye-wood, which, when cut in pieces, resembled *brazas*, coals of fire: from which circumstance it acquired the name of Brasil wood, and also conferred a name on the country.

In 1510 a vessel under the command of Diogo Alvares Corrêa was wrecked near the entrance of this bay. The Tupinambas, a ferocious tribe inhabiting the coast, fell upon and destroyed all who survived the shipwreck, save the captain of the vessel, Diogo, whom they spared, as some supposed, on account of his activity in assisting them to save articles from the wreck. Bahia owes to this event its foundation, and its being long the capital of Brasil.

The entrance of the Bay of All Saints is formed, on the West, by the Island Itaporica, and on the East by the peninsula, on which stands the CITY of St. SALVADOR, or of BAHIA. Within it the land forms an extensive gulf or inland sea, bearing the name of *Reconcavo*, and which receives the waters of several large rivers. The entrance of the bay is 7 miles broad, and the gulf within more than 32 leagues in circumference.

The situation of Bahia may be instantaneously understood by reference to the chart of the harbour, which exhibits the anchorage, &c. Here fleets, riding on clear ground, may be sheltered from every wind, and surrounded by a country exuberantly rich, in a gulf which seems as if formed by nature for the emporium of the universe.* The whole of the land which composes the promontory terminating at Cape Antonio appears much higher than that on the opposite side of the bay: it is covered by trees and verdure; and may be seen, in fine weather, at the distance of 10 leagues.

On the site of the former lighthouse, the Fort Santo Antonio da Barra, and at about 140 feet above the level of the sea, is a revolving light, showing two brilliant white sides and one red; the latter to be seen once in every four minutes. The lights are visible from the distance of 25 to 30 miles.

Bahia, or San Salvador de Bahia, stands on the western shore of the Bahia de Todos os Santos, which extends 28 miles from South to North, and 20 from East to West. The bay has two entrances on both sides of the Island of Itaporica, of which the eastern is about 5 miles wide, and is used by large vessels; the western, called Barra Falsa, is only 2 miles wide, and owing to its shallowness can only be navigated by coasting vessels. The best anchorage is opposite the town of Bahia. The town consists of two parts, the Praya or Citade Baxa, and the Citade Alta, which has the aspect of an old city. The Praya (beach) is one street, nearly 4 miles long, and contains the magazines and warehouses for inland produce and foreign goods. At its southern extremity are the arsenal and the royal docks, and about 3 miles north-east of it, at Tagagipe, the ship yards in which mercantile vessels are built. A steep and very difficult ascent leads to the Citade Alta. Those who can pay are carried up in a cadeira, or ornamented chair, which is supported on the shoulders of negroes. The upper town consists of stone houses from three to five stories high, and of a good appearance. In the centre are several squares surrounded principally by public buildings. The cathedral, the old Jesuits' college, now a hospital, and numerous churches, are the chief public buildings in the upper town. Mr. Kidder is silent as to the number of inhabitants of Bahia and other towns in the province. The population has been estimated as exceeding 180,000 souls.

---

* Lindley's Voyage to Brasil.

Some of the streets between the upper and lower towns wind by a zig-zag course along ravines; others slant across an almost perpendicular bluff, to avoid, as much as possible, its steepness. Nor is the surface level, when you have ascended to the summit. Its extent between its extreme limits, Rio Vermelho and Montserate, is about 6 miles. The town of Bahia is nowhere wide, and for the most part is composed of only one or two principal streets. The direction of these changes with the various curves and angles of the promontory. Frequent openings, between the houses built along the summit, exhibit the most picturesque views of the bay on the one hand, and of the country on the other.

Great sums have been expended in the construction of pavements, but more with a view to preserve the streets from injury by rains, than to furnish roads for any kind of carriages. Here and there may be seen an ancient fountain of stonework, placed in a valley of greater or less depth, to serve as a rendezvous for some stream that trickles down the hill above; but there is no important aqueduct.

Beyond the city stands the ruined wall of a public cemetery. This cemetery had been laid out and prepared under the auspices of a company, to which had been conceded the privilege of making the interments for the whole city, to their future exclusion from the churches. This was a measure so imperatively called for with respect to health, that it had met with but little opposition at first, and had obtained the sanction of the archbishop. But no sooner was the new cemetery opened for use, than the popular fury broke forth against it. The people assembled in a mob, excited by their priests, whose perquisites were about to be curtailed. When the troops were called out to quell the riot, they joined the mob, and the whole cemetery was defaced and ruined.

The hedges of the suburbs of Bahia are composed of lime trees, the leaves of which, when newly trimmed, emit an exquisite fragrance. Large jaca trees, with their heavy fruit, clinging to the limbs and trunk, together with other trees, are abundant here.

Descending towards the Red River, or rivulet, the route is beautifully ornamented by coqueiros, and other indigenous trees and shrubs. Close under the brow of the Antonio hill is the principal establishment connected with the whale fisheries of the harbour.

On the capture of a whale in the bay hundreds of people, the coloured especially, throng around to witness its dying struggles, and to procure portions of the flesh, which they cook and eat. Vast quantities of this fishy food are cooked in the streets, and sold by Quitandeiras. Swine also feast upon the remains. This fishery, at the close of the seventeenth century, was rented to contractors by the Crown for 30,000 dollars annually. The American whalers occasionally take whales off this coast, but in general they find other cruising grounds more profitable.

Ascending a winding path from the beach to the Victoria Hill, the English cemetery is beautifully situated.

In the principal parts of the city there is an almost entire absence of horses and mules in the streets, but there is an unlimited number of goats and pigs.

The old cathedral, an immense edifice, which had been constructed with great expense, is now in a very neglected state. One of its wings is appropriated to the public library. It contains about 10,000 volumes, a large portion of which are in French, and some valuable manuscripts. The old Jesuit college, together with the church of Nossa Senhora da Conceiçao on the Praya, may almost be said to have been built in Europe, from whence the stones, regularly prepared for use, were imported. There are numerous other churches, the president's palace, a substantial building of ancient date.

Among the parochial churches, those of the Concession, Pillar, and St. Peter, are the most distinguished within the city, and those of St. Antonio and Vittoria near the bar, which stand in such striking situations as to form excellent sea marks.

In the Royal Square is the house, or palace, of the governor, which is an old insignificant building; and opposite are the mint and public offices. The third side contains *the court house of the relaçao*, and the remaining one the hall of the senate and the prison. The latter is an extensive structure, of which the lower divisions are exceedingly strong and secure.

The customhouse and wharfs are on the beach, as is the dockyard. Near the latter are the marine storehouses and offices, with the house of the intendant, or port commander.

A few of the superior class of inhabitants have large, elegant mansions, appropriately fitted up, particularly in the vicinity of the town. The habitations of other opulent individuals are generally roomy and convenient, but shabbily furnished: from the street they have a dull and dirty appearance, which is completely realized within. The houses of tradesmen and shopkeepers are commonly disgustingly dirty; instead of glazed windows, they have wooden drop-lattices, which want even the addition of paint to enliven or preserve them. The lowest order of soldiers, mulattoes, and negroes, have tiled cabins, without a ceiling, and with a single latticed window. These, and other buildings, with the exception of a street or two, are all intermingled throughout the city.

The town and shipping are protected by a number of forts and batteries. The first is that on Cape St. Antonio, a small antique fort, surmounted by the light tower. A little bay and sandy beach within are defended by a small fort called *Fort Cabo*, or *Santa Maria*, and the circular bettery of *St. Diego*. At the S.W. extremity of the city, that leads to the sea, is *Fort Gamboa*, carrying 18 twenty-four pounders, which range at high water mark. Passing this, the dockyard is defended by the high bulwark battery of St. Philip, which mounts about 30 guns. There are three other insignificant batteries on the inhabited part of the beach, and a small one on the projecting point, more to the North, called Montserrat. On the land side the city is defended by three forts, &c.

The principal defence, however, is the *Fort do Mar*, which was erected about the year 1600, on a small rocky bank of the inner bay, about one-quarter of a mile from the shore. It was first built in a circular form; but when the Dutch entered the bay, in 1624, they were so greatly annoyed by it, during their attempt to gain possession, that they thought it deserving of additional fortifications, and they completed it to the shape that it bears at present, raising the original tower, and surrounding it with an extensive lower battery. The diameter of the whole is about 270 feet, and that of the upper tower battery 100. The lower battery mounts twenty-nine guns, of which there are a few that are forty-two pounders, and none less than twenty-four; the upper contains only sixteen, consisting of twenty-four and eighteen pounders. The tower ascends from the level of the lower battery about 25 feet: it is not a solid mass, but has several apartments, which diverge like rays from the centre to the exterior, and are employed as magazines for powder, artillery stores, &c., and for barracks. The top of the tower is paved with flagstones, carefully cemented and sloped, to preserve the rain that falls on its surface, which, collecting in the centre, descends through a grate into an extensive reservoir below, and affords a sufficiency of water for the garrison for six months, without any other supply.

The house and offices of the commandant, and some rooms for state or military prisoners, are ranged on the lower battery, near the sloping entrance of the fort, on the side fronting the sea. This fort defends the marine arsenal.

The flagstaff of this fort (according to M. Roussin) stands in lat. 12° 58′ 23″, lon. 38° 30′ 37″. Variation, in November, 1819, 1° 58′ W. High water, on the full and change, 4ʰ 15′. Spring tides rise 7, neaps only 3 feet. The tides are perfectly regular. At the anchorage before the town the flood and ebb are equal, and their direction is alternately N.N.W. and S.S.E.; their strength, under ordinary circumstances, does not exceed 1½ miles in the hour, but spring tides sometimes run as much as 2½ miles.

The Fort do Mar, or Sea Fort, otherwise called *Fort San Marcello*, repeats the signals of all vessels entering the port, which are first made at Fort St. Antonio. They are announced by a gun, with a tri-coloured jack for the three-masted vessels, a red one for brigs, and white for smacks.

Ships, on arrival in the bay (men of war excepted), must deliver up all their gunpowder, to be deposited in the Fort do Mar, during their continuance in the harbour.

At the imperial dockyard shipbuilding proceeds very slowly, as it admits only one ship of the line at a time; but at the several yards of Tapagipe, north-eastward of the city, well-modelled merchant ships of all dimensions are built, and with greater despatch.

At about a mile from the city is the suburb of *Vittoria*, where Captain Sabine made his observations in 1822, and which he states to be in lat. 12° 59′ 22″, on a sandstone cliff, which descends abruptly about 200 feet to the sea. The great road by the coast to Pernambuco, and generally toward the northward, passes through the village.

The inhabitants of the city and suburbs are estimated at upwards of 100,000; of whom 30,000 may be whites, 30,000 mulattoes, and the rest negroes.

The commerce is very considerable. The imports from Europe are wine, flour, bacalhao, butter, cheese, salt, &c. The exports, cotton, sugar, aqua-ardent (a species of rum), coffee, tobacco, lignum-vitæ, mahogany, satin and tulip woods, gums, balsams, and medicinal roots. From Africa the Bahians receive wax and gold dust, which are obtained in exchange for coarse printed cottons, spirits, and tobacco. The home or coasting trade of Bahia is likewise considerable and extensive; and in that between it and *Rio Grande de St. Pedro* about forty vessels, of 250 tons each, are engaged. These ships, as they arrive in Bahia, sell the jerked beef, which they bring, by retail. It is purchased principally by the lower class of inhabitants, and for the use of slaves and shipping. This method of disposing of the cargo sometimes detains a vessel several months in the port.

In the immediate confines of the bay, particularly inland, the trade is very great; and it has been said that more than 800 launches and smacks, of different sizes, are thus constantly employed. Tobacco, cotton, and various drugs are brought from the *Cachoeira;* a great assortment of common earthenware from the *Iaguaripe:* rum and whale oil from the Island Itaporica; timber from the province of the Ilheos; farinha* and salt fish from Porto Seguro; cotton and maize from the rivers Real and St. Francisco; and sugar, firewood, and vegetables, from all quarters.

Bahia, as well as Pernambuco, has a staple for cotton; and on the importation of this article in the launches and smacks, the whole is landed at a warehouse appointed for the purpose, where it is weighed, sorted, and pressed. Its quality, first, second, or inferior, is marked on the bales, and then it is ready for exportation. In this general store it continues till disposed of by the owner, at the prices commonly fixed by the staplers. The aqua-ardent, or spirit, is controlled by an exclusive company, to whom every pipe that does not pass through its warehouses pays a duty, increasing it to the price at which the company sells.

The general mode of conducting commerce has been by barter, notwithstanding the abundance of specie in circulation; and the inhabitants credit each other to a great extent; but, in their dealings, a mean and knavish cunning too frequently prevails, particularly when trading with strangers, of whom they will ask for a commodity double the price they will take; while they endeavour by every artifice to undervalue what they are to have in exchange.

At Bahia are many artificers, including lapidaries, jewellers, gold and silversmiths, &c., who are deficient only in fashion and taste; also tailors, shoemakers, and tanners.

Of meat, mutton, lamb, and veal, are nearly unknown, and never seen in the market. The beef is generally very lean, flabby, and tasteless.

In all the city there is scarcely any accommodation for strangers. As an inn is unknown, those who choose to live on shore must take the whole or part of a house, and furnish it. This, however, is easily done, as a few chairs, trunks, and a table, will be amply sufficient, and in character. Eating houses are distinguished by a tri-coloured flag over the door; but they are inconceivably dirty and disagreeable. The coffee shops, which are numerous, are little better.

The city and country are alike very much infested with beggars; a subject of real or affected distress presenting itself every moment. Assemblages of these mendicants, to the amount of five hundred, may sometimes be seen at once.

The public promenade of Bahia is situated on the boldest and most commanding height of the old town. One of its sides opens towards the ocean, and another up the bay; an iron railing protects the visitor from danger of falling over the steep precipice by which extends its whole front. The space allotted to the battery is laid out in good taste; but the variety and beauty of the trees and flowers of the Passeio Publico render it a delicious promenade.

The Dias de grande gala, or political holidays, are celebrated throughout the empire. These are six in number; first, New Year's day, or that of paying compliments to the emperor and his representatives in the provinces; the second on the 25th of March, the anniversary of the adoption of the constitution; the 7th of April, that of the emperor's accession; the 3rd of May, or that of opening the legislative assembly; the 7th of September, that of the declaration of independence; and the 2nd of December, or the emperor's birthday.

---

* Farinha is the Cassava flour, prepared from the root of the shrub mandioc. It is the *bread of South America.*

Bands of music frequently pass in large launches, playing in their way to the neighbouring villages on the bay, to commemorate the anniversary of some saint, or other festivity. It has also been a custom with the Portuguese European ships to have music on arrival, at departure, and the first day of taking in cargo; which sounds charmingly from the water. The musicians are all black, and are trained by the barber-surgeons of the city, who are of the same colour, and have been itinerant musicians from time immemorial.

Iaguaripe, Amoro Jacobina, Do Sitio, and San Francisco, are all bustling towns of the province. The country, in general, is cultivated inland to a considerable distance, and is divided into very extensive plantations, many having 200 or 300 slaves, with horses in proportion, to work the *engenios*, or sugar estates, except in those situated where water is introduced to set the mills in motion. The owners of these plantations have very handsome seats, with chapels adjoining, where they generally reside, except during the winter rains, when they repair, with their families, to their houses in the city.

REMARKS from M. ROUSSIN, 1819.—Ships will find at Bahia the means of providing for all their wants: they may careen, re-mast, and repair all sorts of damage; but the workmanship is very dear, and the port dues extravagantly high, as in the other large ports of Brasil.*

In the fine season all kinds of repairs may be made at the anchorage West of the town; during the other part of the year it will be more prudent to make them at Tapagipe, in a little bay situate to the eastward of the peninsula of Montserrat, where the water is smooth as in a basin.

There are good watering places at many points of the interior coast of Bahia: water is easily obtained, either near the *Fort Gamboa* (South of the town), under the public garden, or at some distance to the northward of the marine arsenal; but when a number of ships cause a great concourse of boats, it will be better to go to Tapagipe for water, if required in a great quantity.

Wood for fuel is abundant: and, in 1819, pit coal was obtainable, it having then been introduced into the country. Provisions and refreshments for shipping were easily obtained, nearly at the same prices as at Rio Janeiro; namely, cattle, fariuha, and flour of wheat, rum, poultry, hogs, dried fish, tropical fruits, and vegetables.

An intelligent voyager, who visited Bahia in April, 1824, describes it as follows:—

I went on shore in the evening, and called, as is the etiquette, upon the British consul, who lives at *Vittoria*, in the Upper or New Town. This is almost an English settlement, and delightfully situated, with lanes, at least clean, if not trim, and gardens, or rather shrubberies, to each house, down to the sea. The mango, and other tropical trees, struck me with their rich leafiness, after the barrenness and dryness of Australian foliage. I found the white cedar, the *melia azedarach*, or common bead tree of India, growing here as well as at New South Wales; and I particularly admired the splendour of that species of acacia, called *poinciana pulcherrima*, or the Barbadoes flower-fence.

The Lower Town of Bahia, in which the English merchants have counting houses only, is very close and disgusting, rather from filth and the manners of the Portuguese, than from the mode of building; for narrow streets insure shade, and declivity of ground commands the sea breeze everywhere by its nature, and would command cleanliness with very little art. There are many British merchants and shopkeepers settled here, corresponding principally with Liverpool. They are, as they are all over the world,

---

In the month of March, 1833, the brig *Arethusa*, Captain J. S. Boulton, on her return from Van Diemen's Land, was constrained, from want of water, to put into Bahia: and the captain says, On Saturday, the 16th of March, by our time (Friday, the 15th, by that of the country), we anchored in Bahia Roads; and, after *quarantine* till the evening, found the charges for anchorage, and schemes for detention, in order to augment those charges, truly disgraceful. In short, the expense of gaining twelve casks of water was £20 sterling. See the account of the *route of the Arethusa* in the *Nautical Magazine*, August, 1833.

the wealthiest and most respectable people in the place, and in favour with all parties, royalists, imperialists, and republicans.

The next afternoon I went on shore till my ship should sail, to enjoy the hospitality of my countrymen at Vittoria. I had no other claim to it than that of common country, but that was enough.

The weather favoured our little *relache*, and our ship completed her watering on the 23rd of April. I had, therefore, no time to visit the interior of the country, to which, indeed, there are no roads; but I perambulated the city of Bahia with great diligence, both in *caderas* and on horseback. The streets are too steep for carriages, although the hill, on which the town is built, is not 600 feet high (as the books say), but a little more than 200. The caderas, or curtained chairs, which are as much used by gentlemen as by ladies, are carried obliquely, with only one pole from the top of the chair on the shoulder of each of two negroes; so that each may see his way before him, and the sitter enjoy the thorough breeze, and see before him too, if he chooses to open the curtains.

As it was the season of the carnival, and this city was once the ecclesiastical metropolis of Brasil, we expected to witness the masquerading holydays of the Roman Catholic religion. But the revolution had left priests at a heavy discount. We found the saint cupboards in the streets shut up, and the carnival was forbidden by the governor from fear of political riot.

On Sunday, the 25th, I visited the public garden in the fort of St. Peter, presenting a fine terrace to the sea. In the afternoon I re-embarked, with oranges and limes, though they kept not long, and pleased with Bahia, although I did not find it so musical and romantic as Rio Janeiro.

The climate of Bahia is not oppressive to a visitor; but it must be tiresome to a resident to have the thermometer all the year round from 75° to 85°. Winter rains induce the lower degree, and the higher is always relieved by a sea breeze.

The oranges of Bahia are particularly fine. They are seedless in the main core. The seeds are in a little perfect sub-orange at the top of the other, which gives the fruit somewhat of a pear shape, with the seed chamber divisions indicated in the rind of this little top orange. The ant is a great enemy of this fruit tree. Its armies will strip an orange tree in a night. They surmount all difficulties. Fire at night is the only remedy.

The only manufactory at Bahia is of red pottery. The various water vessels are peculiarly adapted to this warm climate.

SAILING DIRECTIONS for BAHIA.—Cape St. Antonio, at the entrance, is placed by the Baron Roussin in 13° 0′ 44″ S., and 38° 31′ 28″ W. Captain Sabine, in 1832, gave the lon. as 38° 33½′, but other authorities have given it more to the eastward, and the mean appears to be 38° 32½′ W.

Of the principal entrance to Bahia the narrowest part is 4½ miles broad, but only one half of that space (on the eastern side) is navigable for large vessels, owing to ledges of rocks and uneven ground extending from the East and S.E. sides of Itaporica, and which should not be approached to less than 8 or 9 fathoms.

On the eastern side, without this entrance, is the *Bank of St. Antonio*, the outer extremity of which is 4½ miles S. ½ E. from the cape of St. Antonio. This bank is composed of red sand, mixed with coral. It is of an irregular shape, but is narrow in proportion to its breadth, and it extends nearly North and South. The least depth on it is about 13 feet at low water. As the sea sometimes breaks over some parts of it in strong winds, it is always best to pass outside of the above distance in a large ship. The depth of 7 fathoms limits this bank on the South in the parallel of 13° 5½′.

Between this bank and the shore is a channel having a depth of 10 fathoms, with muddy bottom, and frequently used; [*] but it is to be observed that, in going in, the wind almost always allows a vessel to fetch the anchorage before the town by one board, on passing to the southward of the bank. At 1 or 2 miles to the eastward of the southern point of the bank the depth is regular, from 35 to 20 fathoms, and which may be carried close to it.

The bottom, in the vicinity of the bank, is a mixture of sand, coral, and coarse gravel.

---

[*] This is a good channel with a commanding breeze. It has been tried by several British frigates, and recommended as a short and safe passage into Bahia. Its breadth is three-quarters of a mile, and least depth, on either side, 6 and 7 fathoms.

Mud is found in the N.E. only, on approaching the land. At 3 leagues from the coast, with Cape Antonio bearing North to N.N.W., the depth is not more than 40 fathoms; and a little farther off, in the same direction, no soundings have yet been obtained.

At the ENTRANCE of the HARBOUR the depths are from 14 to 16 fathoms, within half a mile of the eastern shore, whence it deepens to 18 or 20 fathoms, westward, until about two-thirds across, farther than which heavy ships ought not to stand. To the westward of this are overfalls, shoaling from 14 to 6½ fathoms, then deepening again to 12; and in some places, at 2½ miles from Itaporica, there are no more than 3 fathoms.

On the eastern point of Itaporica the reefs extend about a mile from shore; and, at about a cable's length without them, the depth is 6 fathoms; it thence increases quickly to 12, 18, 24, and 26 fathoms, soft muddy bottom, and in the midway over is more water: from this, in an easterly direction, the depth gradually decreases to 12 fathoms, at 1 mile or 1½ miles from Fort do Mar.

The *Panella Reef is a spot of very foul ground*, about half a mile in length, from the centre of which the Fort do Mar bears E.S.E. ¾ E. three-quarters of a mile. It has, on some parts, only 3½ fathoms, at three-quarters ebb; on the other parts are 10 fathoms, rocky bottom. H.M.S. *Nereus* moored upon it in 7 fathoms (being then unacquainted), with Fort do Mar bearing East, Fort Cabo, S. 5° W., and Montserrat Fort, N. 15° E., and had her cables much injured.

There is good anchorage around this shoal; between it and Fort do Mar in 7 or 8 fathoms; without it in 12 or 14 fathoms; above it 8 or 9 fathoms; and below it, in the same depth, on good ground. Small vessels generally lie between the city and Fort do Mar.

The best anchorage for ships of war is in 10 or 12 fathoms, with Fort do Mar bearing N. 73° E., and Montserrat Fort N. 28° W., at about 1½ miles from the city. From this spot they will be able to get clear out, with the *very* light morning winds, as the ebb tide sets strongly toward Forts Cabo and St. Antonio.

The *watering place* is at a short distance from the South end of the town, between it and Fort Gamboa; off the latter a shoal extends alongshore, and one-third of a mile outward. On this shoal H.M. sloop *Bonne Citoyenne* grounded in 1812; it has only 10 feet over it at 3 cables' length from shore, hard, sandy bottom. The bastions of Fort Cabo kept just open of the slope of the hill, on which stands a convent with a *double spire* (nearly S. by W.), will lead across the edge of the shoal in 5 fathoms.

A *red* buoy has been placed on this sandbank, which extends from Fort Gamboa, or St. Maratho, to opposite the obelisk, at the public garden. On entering, this buoy must be passed on the right; it is placed with a depth of 2¼ fathoms at low water. The necessity of placing a buoy on this bank is shown by many ships having touched on the same lately.

Captain Horsburgh has said, that "This port is sometimes visited by outward-bound East India ships in want of refreshments; but its situation being in the middle of the S.E. trade, navigators are cautious of touching here, thinking [that] they may find it difficult to get to the South afterward, on account of adverse winds, said (in some old books) to blow along the coast from the southward from March to September; but the East India ships have never found any difficulty in getting from this port to the southward, even in the most unfavourable months, June, July, and August; for the wind generally draws well to the eastward here, and more so as you proceed to the southward."

SHIPS DESTINED TO BAHIA, DURING THE SOUTHERLY MONSOON, should steer for the Morro of San Paulo, in lat. 13° 21′ 53″, lon. 38° 54′. Although this morro is not of great height, it is sufficiently remarkable by being backed and followed to the northward by land lower than itself, and by having on its northern extremity five or six cocoanut trees, divided (in 1819) into two groups, and very distinct in comparison with the surrounding land. The hummock, which terminates this morro to the North, when seen from a short distance, presents on the side next to the sea large white spots, which form a striking contrast with the surrounding verdure, and which may, in clear weather, be seen at the distance of 8 leagues.

To the northward of the Morro of San Paulo the coast is low, sandy, and bordered with reefs; it forms a bay, and then, extending to the N.E., appears as if connected with the high land of Itaporica, on the West side of the entrance of Bahia.

The separation between the western side of Itaporica and the continent forms what is called the *False Entrance* of Bahia. It is very narrow, tortuous, shallow, and cannot readily be distinguished. It admits very small vessels only; for even the coasters do not use it unless when trading there, or when the wind will not permit them to use the principal entrance.

From the Morro of San Paulo to Cape St. Antonio the distance is 10 leagues, and the direction N.E. In fine weather the two points are visible from each other. From near the Morro a ship may safely steer N.E.; a depth of 30 to 11 fathoms will be found on a bottom of mud, sand, gravel, and coral; and this course will lead at a convenient distance between the edge of the banks to the southward of Itaporica and that of St. Antonio. A large vessel should not go to the N.W. of this line, while to the southward of Itaporica; and, if the wind blow strongly on the coast, she should keep outside until certain of being on the meridian of the point *Jabaru*, the East point of that island, which will be known by the depth being above 11 fathoms.

If necessary to work to windward, it will be advisable to go no nearer than 5 miles to the coast of the continent, when to the southward of Itaporica, and to keep at the same distance from the island until Point Jabaru bears North. With this point bearing North, and at 7 miles from it, Cape St. Antonio will bear N. 41° E. *true*, distant 5 miles, and the South extremity of the bank, off the cape, about a league to the eastward; and from thence a course may be shaped for the cape until within half a mile of its shore, and then another direct for the church of *Bom Fim*, on Montserrat, until abreast the Fort do Mar, near which is the ordinary anchorage.

SHIPS BOUND TO BAHIA DURING THE NORTHERLY MONSOONS should endeavour to make the land at some leagues to the northward of the Point Itapuan, which has been before described. During the southerly monsoon they steer for the Morro of San Paulo, described above.

The only precaution necessary to be taken by ships from the northward, in order to avoid the Bank of St. Antonio, is to give a berth of 5 miles to the cape, in rounding it, until it bears N. by E. ½ E., when they may steer for the church of Bom Fim (on the peninsula of Montserrat) until abreast of the Fort do Mar, or of San Marcello, near which is the ordinary anchorage. The depths in this course vary from 10½ fathoms, at a mile West of the Bank of St. Antonio, to 18 fathoms, at the same distance from the fort of that name. Afterward, closing the shore, the depths will diminish gradually to 9 or 8 fathoms, near the Fort do Mar. If, in making this route, the wind should prove contrary, some boards may be made, of 2 or 3 miles, between the bearing which connects Cape St. Antonio and the church of Bom Fim and the banks on the S.E. coast of Itaporica; but it will be necessary to keep the lead going on both tacks, and not to go into less than 7 fathoms.

The ordinary anchorage of ships of war is between West and S.W. of Fort do Mar, at the distance of from 2 to 10 cables' length from that fort. From the anchorage, in 9 fathoms, the Point Maguinha of Itaporica bears North 51° West, Fort St. Antonio, South 21° West, and the Point Montserrat or Mouserat, North 12° East.

The great number of anchors lost here renders it necessary to round the cables, and examine them frequently.

The anchorage for merchant ships is within the line that connects Fort do Mar and the Point Montserrat. On going in, the Panella Reef must be avoided. The pilots place this shoal at 160 fathoms W. by N. from Point do Mar, and on it, they say, there is not to be found more than 3½ fathoms at low water.

The best place within the anchorage for ships of war is opposite the obelisk of the public garden. Ships moor in a N.N.E. and S.S.W. direction, being that of the flood and ebb tides.

The prevailing wind is from East and S.E., with which ships may get in on one board. During the night the wind is from various points of the compass, and principally from the land side. The winds from North to South, by the East, which prevail most frequently, are always weakened by the heights under which vessels anchor, and the land winds seldom have any strength. In the southerly monsoons only, and principally in the months of July, August, and September, the winds veering sometimes to S.W. blow home into the bay, and cause a great swell, which is very incommodious, particularly at the change of tides: but these circumstances are of short duration; they occur generally at the times of new and full moons, and do not last beyond three or four successive days.

THE ROUTE FOR GOING OUT is the same as that for coming in, on the reversed direction. A vessel must run along the coast at the distance of half a mile to a mile, until she is abreast and to the westward of the lighthouse of Cape St. Antonio. In this track, from the Fort do Mar, from 8 to 18 fathoms will be found; and if farther off, a greater depth, even to 25 and 27 fathoms. Having arrived at 1 mile West of Cape St. Antonio, and steering S.S.W. 5 miles, the shoal of the cape will be passed in a good depth; after which a course may be shaped for the eastward.

III.—BAHIA TO PORTO SEGURO AND THE ABROLHOS.

THE ISLAND ITAPORICA, opposite to St. Salvador, is enriched by numerous villages, delightfully situated. Its chief town is near the North end, defended by a strong fort, and has a brisk trade; it being the general mart of the island, and the rendezvous of all the launches passing through the inlets and creeks of this part of the bay. There are distilleries here, two churches, and an establishment for preparing oil from whales, which are frequently taken off the coast. Of the latter, many at times are seen, but few only are killed, in large boats, from the shore, to which the prizes are conveyed for boiling; but as the oil thus produced is by no means equal to the consumption, it is consequently dear.*

The island of Itaporica is about 18 miles long, and 5 miles wide on an average. It has a population estimated at 16,000 souls, of whom 7,000 were said to live in its town. San Amaro, situated on a river which falls into the northern extremity of the bay, in a country abounding in sugar and tobacco, was estimated to contain 10,000 inhabitants. Caxoeira, on the river Paraguassu, is built at the point to which the tide ascends, and near some cataracts which interrupt the ascent of the river. In its neighbourhood there are plantations of sugar and tobacco; it contains 25,000 inhabitants. Camamu is a seaport South of the Bahia, and with an estimated population of 8,000 inhabitants; exports to the capital mandioc, rice, maize, coffee, and the bark of the mango tree, which is used in tanning. A row of small islands and rocks skirt the shores North of the Bahia de Camamu, and form a channel by which small vessels can proceed to the Barra Falsa, without being exposed to the dangers of an open sea.

The channel between Itaporica and the main is navigated by small vessels, as we have already noticed, and a passage into All Saints' Bay may thus be made by the coasters, when the wind does not admit a direct passage to St. Salvador from the southward.

The MORRO DE ST. PAULO, in the parallel of 13° 22′, appears, at a great distance, like a high, bluff, rugged hill; but on approaching, is found to be covered with beautiful verdure, and on its extreme point stands a neglected fortification. Passing this, the land forms a small deep bay, the water of which is transparent, and as placid as a mill pond.

The coast of the island of St. Paul is bold; the town of this island is the capital of the presidio of St. Paul, but it is a miserable one, though delightfully situated. Here also are a fort and garrison.

RIO UNA.—On the N.W. of the Morro of St. Paulo the mouth of the *river Una* is nearly 3 miles broad, and forms a convenient harbour. Its western shore is low and sandy, and bordered by a sandbank, more than a mile broad on the outer part, but diminishing inward to a point, to 2½ miles W.N.W. from the Morro, where the river is about nine-tenths of a mile broad. On this line of direction the soundings, with clean and good ground, vary from 4½ to 5, 6, 7, 8, and 9 fathoms; with secure anchorage, sheltered by the high lands to the eastward, the Morro bearing about E. by N. a mile distant. The landing place is half a mile within the Morro, on a small bay, within which is a village, protected by batteries, and having a red projecting cliff on the West. (High water at 3^h p.m., rise, 6 feet.)—*Captain Charles Eden*, 1835.

Without the Morro, on the S.E., is a low islet, *Tinharé*, 3 cables long from West to East, and surrounded by foul ground, with breakers extending from it on the N.E. at 7 cables from the fort on the Morro Point.

The coast of Boypeda Island, southward of St. Paul's, is rocky and dangerous; particularly in the southern part called the Morrera Reef. At 3 leagues from the latter are other dangerous reefs, which extend far out from Ponta dos Castelhanos. From the wrecks which have occurred, Mr. Lindley advises that vessels passing should not approach the coast hereabout within half a degree.

---

* Lindley's Narrative, page 141.

RIO CAMAMU.—Point Castelhanos is the North point of an elevated coast, whence it inclines to a low point, *Ponta da Muta*, off which lies, in the same northerly direction, the little isle *Quiepé*, surrounded by rocks. This isle, with the adjacent coast, form between them a small basin, into which falls the river *Acarahy*, distinguished by the little town of Camamu. Breakers impede an entrance into this bay, and prevent the access of all but small vessels.

The land of the Camamu, to the southward of Castelhanos Point, is covered with mangroves. Its termination may be known by a white rock (*Pedra Branca*) upon the South side of the *Riv das Contus*, a river accessible only by boats, in lat. 14° 18′.

The mouth of the Contas may be seen from the offing. Its South point is high and covered with trees; and, on nearing the coast, a small town will be seen.

From the Contas the coast trends S. ¼ W. 10 leagues. All along it is perfectly clean, and large ships may proceed along it at the distance of 2 miles. The line of coast is broken only by several small creeks or mouths of rivulets.

St. GEORGE DOS ILHEOS.—The Fort of St. George dos Ilheos is situate on the South side of the bay of the same name, and appears like a part of the little town which is the capital of the province. Two remarkable islets lie off the mouth of the river, at a short distance to the East, and form with the coast a shelter for the coasters. A range of reefs extends to the southward, athwart the mouth of the river. Hence vessels proceeding to the latter must round the northernmost islet (*Isla Verde*), off the western side of which they may anchor in 8 fathoms. The isles at a distance appear in the shape of cardinals' hats; one is covered with trees, and the other is bare, and frequently covered with breakers. The *Rio Ilheos* is large, but divided inland into many small branches. The town of St. George, immediately on entering the river, may be seen on the North side. On the bar is little more than 2 fathoms. The North point of the entrance is a high land, called *Ponta de Caõ*, or *Dog's Nose*, at the base of which are some rocks, over which the sea runs in breakers.

The latitude of the Ilha Verde is 14° 47′ 23″. At 3 miles to the East of it the depth is of 18 fathoms, bottom of oaze.

BELMONTE.—At the distance of 21 leagues S. 4° E. from the fort of St. George dos Ilheos is the mouth of a river, the *Rio Grande de Porto Seguro*, the entrance to which may be known by the town of BELMONTE, a new and thriving settlement. This town commences on the South point of the river, and is masked by heavy breakers on shore to the right and left. The river is said to be one of the second order of the interior of Brasil, but has not more than 2 fathoms over the bar at high water. The province of Porto Seguro is bounded on the North by this river, which divides it from that of the Ilheos, or Isles.

The coast to the northward of Belmonte is straight, bold-to, and uniformly woody, and may be approached with safety.* At from 1 to 5 miles from shore are found from 7 to 20 fathoms of water, over a bottom where oaze and broken madrepores predominate. At about 10 leagues to the North of Belmonte are the southern boundaries of the *Serras da Itaraca*, a group of mountains terminating the low lands which follow *Mount Pascoal*, or *Pascal*, to the North. The southernmost of this group are the *Morros de Commandatuba*, where there is a small river of the same name, in lat. 15° 19′. Beyond the parallel of these mountains the shore, variegated by hills, covered with trees, and small cultivated valleys, presents a very pleasing aspect, onward or northward to Bahia, or the Bay of All Saints.

PORTO SEGURO, &c.—From Belmonte, or the mouth of the Rio Grande, to *Porto Seguro* (lat. 16° 26′ 50″) the coast trends S. 15° W. 38 miles. It is covered with trees, which seem to lower gradually on advancing from the South to the North; and it is bordered, nearly to the distance of 3 miles off, with sandbanks and shoals, several of which are uncovered at low water, and dangerous to approach without a pilot. The banks are separated by the openings before *Santá Cruz*, *Coroã Vermelha*, adjoining, and *St. Antonio*, small establishments on the coast, accessible to small vessels of the country only, and unimportant to vessels of burthen.

---

* The country hereabout is covered with extensive forests, and the trees are considered as the best for ship building in Brasil. Hence, therefore, the government yards are chiefly supplied.

The HARBOUR named PORTO SEGURO is formed by a reef or ledge of rocks that extend from a point of the main about a mile out, in a direction parallel with the land, forming a natural mole. These rocks are dry at low water, and terminate abruptly, appearing again faintly at the distance of half a mile; the space between is the entrance or bar of the harbour, over which there is a depth of 20 feet with high tides, but the depth within shoalens to 12 feet. The last may be considered as the average depth of the port. The bottom is of fine sand, gradually ascending to a broad beach.

On entering, the view of the country is delightful. Near the water's edge is a range of fishermen's cottages, shaded with waving cocoa in front, and each having its adjoining orange ground. At the back of these cots the native underwood intrudes, and, intersected into numberless paths, forms evergreen groves, full of birds of rich plumage, and some of song. To the northward the land rises to a steep hill, which is ascended by a winding path, leading to the town, which stands upon its summit.

Of the town, the streets are sufficiently broad, straight, but irregularly disposed. The houses are generally of one story, low and ill built, of soft clay bricks, cemented with the same, and plastered over. They are wholly destitute of glazed windows, having only lattices of split cane, and appear dirty and wretched. About half a dozen are of two stories; the largest of which is a quadrangular town house and a prison, the house of the civil governor, &c. The churches, of which there are two, have glazed windows, and are, as usual in Brasil, the best buildings in the place.

On the banks of the river, below the town, stands a village of the same extent, containing about 400 cabins or cottages, and 3,000 inhabitants, including slaves and Indians. These people are employed solely in the fishery about the isles and rocks called the Abrolhos. Fifty decked launches, or thereabout, are employed in this fishery, which keep the sea for a month or six weeks, until their cargoes are completed. The principal fish is a large one, of the salmon species, which is salted for the Bahia market.

Those who remain in town, and are not fishers, are employed in careening the launches, and making nets and lines. The latter are the best in the world; being composed of cotton well twisted, and then rubbed several times with the inner bark of a tree, which contains a glutinous resin that immediately hardens in the sun, and is proof against the effect of salt water. These lines are thus peculiarly strong, and yet elastic. Of the launches and cargoes the property is confined to a few individuals, who are comparatively rich; receiving returns for their fish in cash and necessaries of food and clothing, which are sold again to such of their poorer dependents as can purchase, for the generality are unable. Happily for the latter they live in a fine climate, wherein no extremes of heat or cold distress the human frame, and where they can exist almost without clothing. Although fresh fish may be obtained in great quantities on the coast, the people are too indolent to procure them, and this article is dear and scarce. The common food is salt fish and farinha (the latter is about 3s. 6d. per bushel), with oranges, bananas, and cocoas, which fruits are in such abundance that they bear no price. English vegetables are here exotics; potatoes and cabbages are scarcely known, onions are imported from Europe or Bahia. Of beef only one beast is killed in a week, and that on Sunday; the prime quarters are then taken for the governor and officers of the town, and the remainder sold to the people.

The principal inhabitants have each a country farm, mostly situated on the banks of the river, to the distance of 5 leagues from the entrance, and extending to a village named Villa Verde. At these are plantations of sugar, with mandioc for farinha. Poultry and domestic cattle are plentiful, yet the general diet is much the same as that in town, and milk is totally unused. With cultivation and industry all the blessings of nature would abound here; while from misrule on the part of government, and indolence on that of individuals, the greater part of the people exist in want, poverty, and ignorance of the best enjoyments of human life. The climate cannot be admitted as an excuse for want of exertion, for many weeks are as moderate as an European September, and the winter months are generally so; even during the hot days there are intervals of cool breezes, besides some hours of every evening and morning, during which the sun's rays have but little force, and the ground is cool from the excessive dews which fall here.

The inhabitants plume themselves on the circumstance of theirs being the spot where Brasil was first discovered by Cabral, in March, 1500; and they preserve, with great veneration, the holy cross that was erected under a spreading tree at the first high mass, with music, discharge of ordnance, &c.

The Baron Roussin says that the small river which falls into the port has, according to the pilots, only 18 feet over the bar at high water, and within are 11 feet; so that it cannot receive large vessels. Several banks, besides, extend to the offing, and it is dangerous to approach within 2 leagues without a pilot. At this distance are 10 fathoms of water.

It is stated above that the town of Porto Seguro stands on the North side of the harbour. The land is scarped or steep, and the ascent to it is by a winding road, remarkable by its reddish colour, by which it may be known on advancing from the offing.

The fertility of the adjacent country offers many resources to vessels which may visit the port, and which may easily obtain water, wood, cattle, and all the ordinary refreshments of a tropical climate.

At the distance of 2 miles to the southward of Porto Seguro is the chapel of *Nossa Senhora da Judea.* It is very elevated, and its white walls, in contrast with the trees beyond it, form an excellent seamark. Its patroness, the *Madonna,* is particularly invoked by the neighbouring coasters, in cases of distress or contrary winds.

To the southward of Porto Seguro, beyond the chapel of Nossa Senhora da Judea, is a small shallow bay, called that of *Trancoso.* Here are several plantations, and the country appears delightful. Farther southward, as shown on the chart, is the *Rio dos Frados* (River of the Fathers). The mouth of this is completely choked by a bar, and there is not a single plantation on its banks.

MONTE PASCOAL, or *Mount Pascal,* in about 16° 54′ S. and 39° 23′ W., rears its circular white head, and is conspicuous to a great distance, serving as a pilot mark in the dangerous navigation to the Rio Caravelhas; for all along the coast hereabout is an assemblage of reefs, sunken rocks, and shallows; yet the neighbouring pilots conduct vessels so skilfully through, that few accidents are known.

From the Rio dos Frados, southward, to the *Villa Prado,* situate at the entrance of the Rio Jucurucu, is a long range of neglected coast, intersected by several small rivers, and frequented by such numbers of hostile Indians, that travelling on the beach is exceedingly dangerous, and never attempted without a guard. PRADO (lat. 17° 22′) is a thriving fishing town, but it is exceeded by Alcobaça, which stands more to the southward. The people of the neighbourhood employ themselves exclusively in the culture of farinha, with which they supply the port of Caravelhas.

CARAVELHAS, or CARAVELLOS, in the parallel of 17° 42′ S., is the principal mart for farinha on this coast, and the place from which Rio Janeiro, Bahia, and Pernambuco are chiefly supplied. A considerable number of smacks, barks, and launches, belong to this port; which are built here, not only for its own use, but also for that of Porto Seguro. The river has, however, a dangerous bar that will admit vessels of 12 feet only; but within the bar there is a depth of 10 fathoms. The river is 2 miles broad, and proportionably deep, and for 6 miles that it ascends to the town (St. Antonio), its banks are beautifully interspersed with plantations. The town is bustling and populous; the buildings are somewhat superior to those of Porto Seguro, though in the same style; but the church has a miserable appearance. The country around is well cultivated with plantations of mandioc, from which farinha is extracted.

The Mount Pascal is the first remarkable mountain which is presented to view from sea on approaching from the southward; it makes part of a group of hills, extending nearly in a S.E. and N.W. direction, whereof the southernmost presents, at its northern extremity, a piton in form of a large square tower, which cannot be mistaken.

When seen from the East, Mount Pascal appears conical; at 5 leagues from shore it may be easily recognised from its elevation, and the heights surrounding it, which may be seen afar off.

The ITACOLOMI, an irregular assemblage of rocks and sandy banks, of which several are uncovered at low water, extend in a North and South direction, 11 miles, at a distance of 5 to 10 miles from the coast.* Their extent is from E.S.E. of Mount Pascal up to its parallel. You may navigate and anchor between them and the land from the southern extremity to one half of their length; but the northern part is connected to the shore by a bar or bank of sand, which it is said leaves no passage. By keeping to the distance of 13 miles from the coast you will avoid all danger, and have from 10 to 20 fathoms of water. At 16 miles more to the East there are 80 fathoms.

---

* *Itacolomi* is a generic Brasilian name given to many rocks which appear above water, and *to round hummocks* on the coast.

As you advance to the land, North of the parallel of Mount Pascal, you may approach it to the distance of 3 miles, where the depths are from 10 to 22 fathoms, on a great part of the coast northward.

In proportion as you approach Porto Seguro, on coming from the South, the cliffs appear more red, and the woods with which they are crowned have an admixture of cocoa trees, a sort of tree seldom seen more to the South. In proceeding along you pass successively before the entrances (hardly visible at 4 miles off) of the Cramimuan, Joasima, Frados, the little bay of Trancoso, and the chapel of N. S. da Judea, before described, as an excellent mark for the port.

PRADO.—The coast from the parallel of Mount Pascal to the *Villa Prado* trends S. ¾ W. It is low, woody, and uniform, as it likewise continues more to the South; but it is distinguished by its low cliffs of tufa or sandstone, of a reddish colour, which form the shore; a few heights in the interior of the country may be seen, less elevated, however, than Mount Pascal, and still less toward the sea.

Prado, on the parallel of 17° 22′ S. stands, as above noticed, at the entrance of the little river Jucurucu, which forms an opening very apparent among the trees with which the coast is covered. You may approach this embouchure to the distance of 3 miles, and have from 9 to 13 fathoms of water, bottom of sand and oaze; and this depth continues, along shore, as far as a league to the North of the small hamlet *Colombiana*, situate on the shore, E.S.E. from Mount Pascal.

The **ABROLHOS,*** or ISLETS OF SANTA BARBARA, at 12 leagues from the coast, in lat. 17° 58′, and lon. about 38° 36′, are four in number, exclusive of several patches of rock, of which the largest is at 150 fathoms to the North of the largest and easternmost islet.

These islets form between them a trapezium of about 3,000 fathoms in extent. The two northernmost are the highest; that to the West being 130, and the other 150 feet high. The group may be seen from the topmasthead of a frigate, at the distance of 22 miles, if the weather be clear.

The islets are formed of a sort of whitish rock, which decomposes in the air, but hardens in the sea. It is of the same nature with that which constitutes almost all the other islets and rocks on the Brasilian coast. The Abrolhos, therefore, are perfectly sterile, with the exception of rushes, some cactus, wild purslain, and a cluster of small shrubs, whereof the existence is singular, in the middle of this mass of rocks.

Innumerable seabirds cover the islets with their nests and eggs, but none of these birds are fit to eat. Turtle at times have been found, but not so frequently as the solitude of the place would lead us to suppose. Sea salt, perfectly crystallized, is found in several places, and a small quantity of fresh water filters down to the base at the North point of the northern islet.

In July, 1819, few fish were to be found at the Abrolhos. This was, however, attributed to its being an unfavourable season; for it is in the vicinity of these islets that the fishery is carried on by the inhabitants of the neighbouring coasts. According to the information of the pilots, those of Porto Seguro, principally, send out fifty vessels every year during the northern monsoon; they take cargoes of fish, of a good quality, which are called *Garoupas;* these are dried, and then compose an ordinary food for the people and slaves. The vessels generally remain out for six weeks.

It is, therefore, clear, that the only object which a ship may hope to find, by touching here, during a part of the year, is relaxation for a crew fatigued from sea, or for repairing damage caused by accident or bad weather.

On the West of the Abrolhos is the channel distinguished by the same name, and which is bounded on the West by the extensive banks and reefs named the *Pracel das Paredes,* on which are many rocks even with, and some above the surface of the water. These banks and the shore within them are very imperfectly known, not having yet been properly surveyed; but they are represented in two great divisions, and separated by a space of 3 leagues in breadth, from North and South. Their outer edges are from 8 to

---

* **Abrolhos, i. e., "Open your eyes."—Portuguese.**

10 leagues from the coast, and they are so steep as to have acquired the name of *Paredes*, or *Walls*. The extent between their northern and southern parts, from the parallel of 17° 29′ to 18° 9′, is a distance of 13 leagues. There is said to be within them a small channel along shore, known to the coasters only, and not to be attempted without a most experienced pilot.

Within the parallels of the Paredes the coast comprises the towns of *Alcobaça*, *Caravelhas*, *Villa Viçoza*, and *Portalegre*, all of which communicate with the sea by rivers admitting the coasters.

The eastern side of the Paredes rises abruptly from the bottom of the sea, without indicating any diminution of depth. From the edge of these banks, as well as in the middle of the Abrolhos Channel, in clear weather, the opposite coast may be seen. This coast is flat, and covered with trees, which, at this distance, appear as if nearly overflowed. Hence, also, the Abrolhos Islets may be seen. The Baron Roussin gives the position of Sta. Barbara, the eastern islet, as latitude 17° 57′ 44″ South, and 38° 41′ 47″ West, and Captain FitzRoy gives it as 17° 57′ 42″ and 38° 41′ 30″; but we take the longitude to be about five minutes more to the East. *Variation of the compass* here, in August, 1819, 0° 46′ West.

The Abrolhos, or Brasil Banks, which form either a continuous range or a series of detached flats, for they have not been completely examined, are placed on the charts as the *Hotspur*, the *Victoria*, the *Pilot Bank*, &c.

These banks, which lie between 16° and 22° South, and between lon. 30° West and the coast, are but imperfectly known. They have been sounded on by many ships in former years, especially by the *Hotspur*, in 1814. The *Hotspur Bank* was more completely examined by Captain Denham in H.M.S. *Herald* and *Torch* steamers, in 1852, the result of which is the delineation of a bank extending 14 miles N.W. and S.E., and 10 miles in a N.E. and S.W. direction, with as little as 25 fathoms on the middle of it, and which deepened suddenly from 30 to 70 and 200 fathoms, without bottom. Its N.W. extreme is in lat. 17° 51′ 30″ South, lon. 36° 5′ 9″ West. No ripples or discoloration indicated its existence.

The *Victoria Bank* had been sounded on by the U.S.S. *Congress* in 1817, and another by the *John Adams* in 1849, but Captain Denham ascertained its extreme extent in 1852. Its general depth is 35 fathoms, bending to the South in its general direction from N.W. to N.E. 72 miles in length and 12 in breadth, with one spot at its N.E. extreme of only 19 fathoms, lat. 20° 45′ 8″ South, lon. 37° 47′ 33″ West.

All these banks have one characteristic, that of having a hard coralline crust, and also of being very steep-to.

In the ABROLHOS CHANNEL, with the exception of a few spots of 7 fathoms, the general depths are from 14 to 9 fathoms. The direction in which there is the most water is nearly S.S.E. and N.N.W., in passing at 2 miles to the West of the islets. Large vessels may anchor in this direction from the islets at the distance of from 1 to 8 miles.

The Baron Roussin says that although this channel is 3 leagues wide, it is of little consequence to large ships; but a letter from a naval commander at *Rio* dated in October, 1834, says, "We sailed round the Abrolhos Isles, and found the inside channel perfectly safe. In daylight and favourable weather any ship may sail inside them without risk."

It has been stated that H.M.S. *Doris*, by adopting the inner channel, in 1823, made the passage to Bahia from Rio Janeiro in half the time that the *Conway* did, by keeping well outside. The *Doris* sailed from Rio after the *Conway*, and arrived before. The *Doris* had smooth water and favourable weather, while the *Conway* had a troublesome sea, and much wind. (*Editor of the Nautical Magazine, January*, 1835, p. 52.)

In the remark book of H.M.S. *Tartar*, 1823, Mr. Wood, the master, says, the Abrolhos are low, and their vicinity should be approached with caution; but, with due attention to the lead, they may be passed with safety; and should a vessel be so situated, while attempting to pass them, either from the southward or northward, as not to be able to weather them without tacking, they will find a safe channel to the westward of them and of some rocks just appearing above water.*

---

* It appears that from E.S.E. to South, by the North and West, vessels of moderate size may, *with precaution*, approach to a sight of the islets, and anchor at a distance from them, or

Lastly, *Captain FitzRoy*, of H.M.S. *Beagle*, 1832, has said, "Having made both passages, I venture to observe that going within the Abrolhos certainly shortens that between Rio and Bahia very much; but yet I would not recommend it to any vessel unless she has reason to make unusual haste. The soundings are very irregular, varying suddenly from 20 to 6 fathoms; and there are both reefs and currents."

The Tides are irregular in the vicinity of the Abrolhos; the currents follow the direction of the prevailing winds; and their velocity, when the *Baron Roussin* was here, did not appear to exceed 1$\frac{3}{10}$ miles in the hour. The difference of level between high and low water was taken at 5 feet on the full and change.

In a letter addressed to Captain Beaufort by Captain FitzRoy, 10th April, 1832, this gentleman has said, "On the 18th of March we sailed from Bahia, and worked our way slowly toward the eastern limit of the Abrolhos Banks. The winds, being light and easterly, favoured our sounding frequently, and taking good observations.

"Having reached the parallel of the Islands, to the eastward of the easternmost soundings laid down in the charts, and finding no ground with 300 fathoms of line, I began to steer westward, sounding continually, and keeping a sharp lookout at the mast-head. At 2^h p.m. on the 26th, we had no bottom with 230 fathoms, and at 4^h p.m., we found only 30 fathoms, without the slightest change either in the colour of the water or in its temperature, or any indication of so sudden a change in its depth.

"I directly hauled to the wind and worked back again to the eastward, to have another opportunity of confirming the place of the edge of the bank. We lost soundings as suddenly as we had found them; and, in standing to the westward a second time with a grapnel towing astern by 200 fathoms of line, we hooked the rocky bottom and straightened the grapnel; but my object in ascertaining the exact beginning of the bank was gained.

"From that spot we had soundings in less than 40 fathoms, until we anchored near the Abrolhos Isles.

"I passed to the southward and eastward of them, because that side had not been examined, but time would not allow of my doing what I wished while so favourable an opportunity offered.

"At least a fortnight would be necessary to complete the survey of Baron Roussin, which appears, so far as we have examined, to be extremely correct. The soundings are so irregular, that little dependence can be placed on the lead. It is only by a multitude of soundings, by watching the sea when there is much swell, and traversing every part with a sharp lookout at the mast-head, that the neighbourhood of the Abrolhos, particularly to the S.E., can be thoroughly examined.

"More than once we had 4 or 5 fathoms under one side of the vessel, and from 15 to 20 under the other side. The *sauts de sonde* [skips of bottom], as the French express it, are surprising.

"The tide, or rather current, which we experienced, set continually to the southward for the three days we were near these isles, varying from half a mile to 1¼ miles an hour.

"I supposed that the bottom was composed chiefly of coral rock, but was surprised to find no coral, excepting small fragments growing on the solid rock, which is chiefly gness and sandstone. As most of the charts say '*coral rock*,' I have sent a few of the soundings for your inspection, and you will see by them that what has been here called coral is the coating of a solid rock formed by the deposit of the sea water, mixed with coralline substances, and what a sailor generally calls barnacles.

"My meridian distance of the Abrolhos Rocks from Bahia, their latitude, and their

---

from 1 to 8 miles, from N.W. to the South by the West. There is no part between the South and the S.E. on which there is any uncertainty; but it has been shown, in descriptions formerly given, that this part is not much more dangerous than the other. *Pimentel*, in alluding to an exploration of the coast in 1605, says that several rocks, some of which were uncovered at high water, existed in the direction of S.E. from the islets in a space of about 3 leagues. In admitting this as correct, it will be seen that, in the only part not lately visited, the dangers do not extend much more to the S.E. of the isles than in the other directions.

On the bank of soundings upon which the Abrolhos are based, it appears that generally the depths vary abruptly; and frequently, in small spaces, deepen from several feet to as many fathoms. These undulations appear nearly in a North and South direction.—Roussin.

size, agree precisely with those given in the French survey. But between Bahia and Rio de Janeiro, and consequently between the Abrolhos and Rio de Janeiro, there exists a difference of from 4 to 5 miles between us: this being the only point on which I have found any such difference either on this or on the *Beagle's* former voyage." *

The Baron Roussin has said that an oazy or muddy bottom is rarely found on the ground of the Abrolhos; the presence of oaze in the soundings being a certain indication that you are without the shoals. He found no part without a large mixture of sand and broken madrepore or bits of coral, and in the interior channel only; and he adds that the quality of bottom, most common around the Abrolhos, is a whitish sandstone, composed of the debris of madrepores, and of a greater or less consistence; sometimes this stone is very firm, combined of sand and rock, mostly to the N.E. of the islets. Nearer to these, from S.S.W. to N.E. by the West, the bottom consists of ground like white mortar, in which the anchor penetrates but little, though it holds fast.

In the neighbourhood of the Abrolhos you have coral bottom; after passing them at the distance of 30 miles N. or S., you will have a bottom of light brown sand and shells; the current sets strong over the shoals in a S.S.W. direction. About 30 miles westward of the islands we found a current setting at the rate of 20 miles a day; no doubt with heavy northerly winds they are much stronger, as the currents on this coast are much influenced by winds. When the Abrolhos Islands bear S.S.W. ½ W., they appear like two hillocks with high table land inside of them: the soundings are from 14 and 16 fathoms, broken shells and bottom rock resembling coral.—*Mr. Jeffery.*

On the low shore, in lat. 18° 36′, is the little river of *San Matheo*, described hereafter. At 4 or 5 leagues to the North of this parallel commence the soundings which announce the grounds of the Abrolhos and Paredes. In circumscribing these banks, the islets, and the shoals, in depths under 20 fathoms, an extent of 20 leagues East and West may be assigned; and it follows that a large vessel, unnecessarily, should never run to the westward of the meridian of 37° 40′ between the extreme parallels of the shoals, or 17° 30′ to 18° 15′ S., where about, upon the bank, a depth of from 20 to 25 fathoms may be found.

In following from North to South the meridian of 37½°, from the parallel of 17° 40′ to that of 18° 10′, the soundings skip, at certain places, from more than 100 to 24 fathoms, rocky bottom, indicating as very probable a still less depth; but on a search several miles more to the East no bottom was found with the common lead. In lon. 37° no ground at 200 fathoms.

IV.—THE COAST FROM THE ABROLHOS TO CAPE FRIO, INCLUSIVE.

SAN MATHEO.—The little river of San Matheo has been noticed above. Little advantage can be gained by coming to the bar of this place. The difficulty of the entrance, wherein there are only 4½ feet of water in ordinary high tides, and 9 feet on the syzigies, does not allow access to any but very small vessels; and the breakers, which constantly appear at the mouth, render the navigation dangerous, even to canoes. The people of the country get over this sort of passage only with punts, drawing very little water, or on the rafts called *jangadas*, formed by uniting four or five pieces of timber, surmounted by a cotton sail.

The entrance forms a small opening, with breakers on either side, within which may be seen among the trees the masts of boats. It is said that in fine weather you may see to some distance to the interior, and at a little to the South of the bar three small downs, of which the middle one is the highest, and which serve as a mark from the eastward. The bar is in lat. 18° 37′ 10″, lon. 39° 38′ 40″.

The communications between the sea and the interior of Brazil, by the means of rivers, are in general very difficult, and they are particularly so in the river of San Matheo, as well as in a great number of other rivers which resemble it, and which we shall have occasion to notice hereafter. The pilots say that the river of San Matheo turns to the North above the entrance, after which it has many sinuosities. The little town which bears its name is at 7 leagues from the entrance.

At 36 leagues to the southward from the bar of San Matheo is the *Point Tubaraõ*, on the North side of the bay of *Espirito Santo.* The coast between, generally low and sandy, is broken by the mouths of the small rivers named *Rio Seca*, *Rio Doce*, *Reys Magos*, and *Carahype*, which are all unimportant to navigators. No danger is to be apprehended on this coast until you reach Point Tubaraõ, from which point a reef of rocks extends to the distance of 700 fathoms: with this exception you may approach any part of the coast. At 2 or 3 miles off, whether advancing from the North or the South, the depths are from 20 to 9 fathoms, bottom of sand, mixed with gravel, oaze, madrepores, and broken shells.

---

* *Journal of the Royal Geographical Society*, Vol. II., pp. 315, 316.

RIO SECA.—The bar of the Rio Seca is 10 leagues to the southward of that of San Matheo, and presents only a small opening between the trees on the coast. It is probable that this river exists only during rainy weather, and the supposition seems confirmed by the only information obtained concerning it.

RIO DOCE.—The entrance of the Rio Doce lies in lat. 19° 36′ 57″, lon. 39° 45′, 10 leagues to the southward of the Rio Seca. It is said to extend far up the country, but its entrance is too small to admit large vessels: it, however, appears like a large open space between the trees with which the coast is covered. A bank of red sand extends from each of its two points, and the entrance is again obstructed by another bank of sand, which rises above water; but there are no islands before the river, as shown on some old charts. The northern point extends out a little more than the other, and has on it a large house.*

From the bar of the Rio Doce to Ponto do Tubaraõ, or Shark's Point, the distance is about 16 leagues, and the general trend, with some inflections, S. 32° W. Great part of the coast is low, covered with trees, and the shore is of red sand; but all the interior, from the Rio San Matheo, gradually rises to the westward, and for 10 leagues northward from Point Tubaraõ the land is more elevated down to the shores; it is only to the northward of the Rio Doce that the country, viewed from the sea, appears entirely flat, and it does not change this appearance till, in proceeding northward, you reach the offing of *Mount Pascal*, a distance of more than 50 leagues.

ESPIRITO SANTO, or PORT VICTORIA.—The entrance of this bay may be readily known, in advancing either from the North or the South, by conspicuous marks, seen from the offing. These are two mountains, whereof the one, situate on the South point of the bay, is named *Monte Moreno*, and the other, North of the bay, bears the name of *Mestre Alvaro*, which the pilots pronounce *Mestialvé*.

Mount Moreno is conical and partly woody, but devoid of verdure on the eastern side, and it may be seen, in clear weather, at 10 leagues off. Its base forms, on the North, the South side of the entrance of the river of Espirito Santo. At 2½ miles to the S.E. of it are two rocks of unequal size, named the *Pacotes*: and at about a mile S. 60° W. from Mount Moreno is the *Morro of Nossa Senhora da Penha*, a rocky hill, on the summit of which is a handsome church of the same name, and which may be seen at a distance of 5 leagues.

The elevation of the *Mestre Alvaro* to the northward, its form and insulated position on a land rather low, renders this mountain equally remarkable; and it is to be noticed that it succeeds the low lands of the North, and nearly terminates the high lands of the South, so as to leave no doubt, when it is in sight, as to the position of the vessel, even when the latitude is uncertain, or cannot be obtained.

Two islets, situate at a short distance to the N.N.W. of Monte Moreno, occupy a great part of the harbour of Espirito Santo; but, although the space comprised between these isles and the hill is much obstructed by reefs and two rocks, *la Balea* (the whale), and *le Cavallo*, yet there is a sufficient passage for large vessels entering the river, and it may be seen by the plan of the bay that it has not less than 18 feet of water. This passage is very narrow, but the pilots say that it is the best.

To a stranger the best anchorage appears to be without the entrance, in 12 or 13 fathoms, whence the college at Victoria will be in a line with the northern base of Mount Moreno. Here you will have a bottom of oaze, good holding ground, and be a mile without all danger; and here you will be in a line of direction for proceeding upward, with the assistance of a pilot.

---

* It was stated in a former description that "the current of the river Doce is so strong that its waters are distinguishable by their colour to the distance of 1½ leagues at sea; that small craft only can enter the river, and these not without difficulty, from the impetuosity of the current, but it is navigable for boats and canoes more than 20 leagues."

A visit to the Bay of Espirito Santo may be useful and interesting to the mariner. At a league above the town of Victoria, and even in the town, very good water may be obtained. At the habitations on shore you may also procure wood, cattle, and an abundance of fruits of the country, at a moderate price. M. Roussin adds,—We do not think that the climate of this town is very wholesome, as we found it extremely humid. The height of the mountains and lands around, and the great cut of the river, on the North shore of which the town is built, account for this condition. At 1,000 fathoms to the East of the meridian of the town is an enormous conical rock, named *Paõ de Açucar* (*Sugar-loaf*), for which you steer on entering the river, so soon as you have doubled Mount Moreno.

The town of VICTORIA, capital of the province, and built like an amphitheatre, on the side of the river, may contain 3,000 or 4,000 inhabitants. If the entrance of the river be as deep as reported, the port must be a good one, as within the bar are found, in some places, from 50 to 60 feet of water.

Mount Moreno is situate in 20° 19′ 23″ S. The variation near it, in July, 1819, was 1° 2′ E. Rise and fall of tide in the anchorage, about 4 feet. The tides without the entrance are not regular. Within, on the full and change, it is high water at 3ʰ.

ESPIRITO SANTO to BENEVENTE.—Near the land, to the southward of the Pacotes, are the islets and rocks of *Jicu;* and at 13 miles more to the southward are the *Guarapari Islets*, between which and the land is a passage for small vessels; and all may advance to the eastern side of them, for there is a depth of 7 fathoms. Farther South, about a league, are the low islets called the *Razas;* and farther on, at an equal distance, is the islet *Calvada*, at 4 miles from the coast. Large ships may pass within the Razas and Calvada, as the depths are from 18 to 11 fathoms.

The river GUARAPARI, to the West of the islet Calvada, falls into the sea between two woody hills, of which that to the South is distinguished by some palm trees, visible in the offing, many houses, and a church with a steeple. The latitude of the last is 20° 43′ 56″. The hill to the South is named in the country *Perro de Caõ;* the other is the mountain of *Guarapari*. The latter is the highest; and it appears that to enter the river it should be to the N.W.

The coast hereabout, and to the northward, is of moderate height, almost covered with small trees, close to each other, and having at certain distances low, yellowish cliffs, which are not found to the southward of the Point of Benevente, which is 14 miles S.W. from Guarapari, in lat. 20° 53′ 50″. In the interior of the country are several groups of remarkable mountains, upright, conical, and inclined, which give to this part of the coast a character different from that which precedes it to the North, and follows it to the South.

From the parallel of the Point of Benevente to that of the isles of St. Anne, in 22° 25′ S., the shore is at a great distance from a chain of mountains in the interior, leaving between them an extensive plain, very low, and extending in some parts 13 leagues. At this distance from the mountains lies that elbow of the coast named *Cape San Thomé.*

This part of the shore of Brasil is nearly level with the sea, and you will perceive only some trees and small patches of land at a distance, the country appearing as if overflowed. Prudence will therefore dictate a sufficient offing. A considerable tract hereabout was only superficially examined by the Baron Roussin, and the information imparted to him by the coasters was erroneous, but the deficiency has been in a great measure supplied from the information of British officers.

At about 5 miles S.W. by S. from the islet Calvada, near Guarapari, the soundings are irregular, and there is frequent occasion to haul out, in order to keep a depth of 12 fathoms. Such soundings extend out about 4 miles to the S.S.W., and the water about them is discoloured. The least depth found was 6½ fathoms, and danger, if any, will show itself plainly; for the water shoalens very suddenly from 12 to 8 and 6 fathoms.

An islet named *Francesa* lies at about 4 miles from shore, in lat. 20° 58′; and a reef, having 7 fathoms close to it, stretches about a quarter of a mile from its N.E. point. Between the islet and main the depth is not more than 3 fathoms, shoaling gradually, with a hard bottom. There is anchorage in 7 fathoms, sandy ground, with the islet N.W. by *W. ½ W. three-quarters* of a mile.

At about 6 miles S.S.W. ½ W. from Francesa is another islet, *Piuma*, small and low, with reefs extending about half a cable's length from the N.E. and S.W. points. In the passage between it and the land are 5½ fathoms, sandy bottom.

About 7 miles S.S.W. from the islet Piuma, and at nearly 5 miles from shore, is a sand bank of 4 fathoms, with 9 and 10 fathoms on each side of it; but shoaling gradually toward the land. Its length has been estimated at 1½ miles long, N. and S., by one quarter broad. The water on approaching and receding shoalens and deepens very abruptly. Off *Point Murubu*, in lat. 21° 11', there is an appearance of breakers, at 2 miles from land.

From Point Murubu, in lat. 21° 11', to Cape San Thomé, in 22° 2', the coast is generally a low sandy beach, thickly covered with brushwood, having here and there a stunted tree. The cape, *as it is called*, terminates in a low sandy point; the country to a great extent within it is low, and intersected by many rivers and lakes.

The soundings off Point Murubu are very irregular, 13 to 9 and 6 fathoms; the water thence deepens suddenly, with a hard, rocky bottom. S.E. from this part of the coast, 10 or 11 leagues off, there are 20 to 22 fathoms of water, and bottom of very fine white sand; but hence toward the shore on the West, and toward Cape San Thomé, it gradually becomes coarser and more regular.

It has been noticed as an indication that may be useful, that in the vicinity of Cape San Thomé, the oazy bottom, so common to the South of this parallel, almost entirely disappears, being here succeeded by a bottom of sand and broken shells; these are, at least, the qualities of bottom found on the survey, from the coast to the distance of 10 or 12 leagues off. It may be remarked again, that at several leagues to the South of the parallel of Belmonte, or about 16° 20' S., commences a bottom of white tufa or sandstone, mixed with, or formed of, broken madrepores, which extend far to the northward, and which is scarcely, if at all, found in the South.

CAPE SAN THOME'.—A bank to the north-eastward of Cape San Thomé, formerly omitted in the charts, has been explored, in consequence of one of those accidents by which so many dangers have been made known. On this shoal, as we have been informed by Captain Livingston, the ship *Earl of Morley* struck and lost its rudder, and a Jersey vessel has been wrecked. It extends 12 miles out from the land; the general depth of water on it is uncertain, but on one spot only 3 feet were found. There is a passage between the shoal (now called the *Morley Bank*) and the land.

From a delineation of the shoal by Mr. Napier, R.N., master of H.M.S. *Wellesley*, 1825, it appears to be a rocky bank of an oval form, and 4 leagues in diameter; the southern edge in a line with Cape St. Thomé bearing nearly E.N.E.

From the *river Parahyba do Sul*, or the parallel of 21° 37', northward to lat. 21°, the coast gradually heightens, and has several remarkable hills inland; but in 21° the beach is not more than from 30 to 40 feet above the level of the sea. In about 21° 10' are three remarkable red cliffs close together, the largest being to the southward. In about 21° 28', at some distance inland, is a remarkable sugarloaf hill, tapering to a fine point or peak at the summit.

From the parallel of 21° to 21° 10', the soundings are very irregular near the shore, frequently altering 3 or 4 fathoms at one cast of the lead; at 6 miles from land, 5, 7, 10, and 13 fathoms have been found. Hereabout the great bank of soundings appears to be steep on the outside, deepening suddenly from 26 fathoms to no ground at a depth of 100 fathoms. In all the space of 9 or 10 miles over these irregular soundings the bottom is of rotten stone and coral, changing on the outer edge to coral and shells.

On approaching Cape San Thomé the soundings are very regular, over a sandy bottom, and on approaching the shoal the ground becomes finer; a few casts of mud may be found, but the bottom generally is of fine sand.

The eastern extremity of the *Shoals of San Thomé*, having 4¾ fathoms, appears to bear from the cape between East and S.E. 7 or 8 miles. H.M.S. *Jaseur*, Captain Martin, in November, 1825, crossed in the last-mentioned depth, and a native smack, about 1½ miles within, from that ship, had 4 fathoms. The least water found upon this shoal, on examination, inshore from the ship, was 3, 3½, and 4 fathoms.

On approaching the cape the water deepened to 5 and 6 fathoms, forming a channel within the bank, the depths in which have not been ascertained.

About the Barra de Furada, to the westward of Cape S. Thomé, there is little else than barren sandy flats, with a few fishermen's huts at the entrançe.

In 4½ fathoms, and close to the breakers of Cape San Thomé, the current has been found so very strong that a ship with difficulty got out again. In 3¼ fathoms to the southward the water was so much agitated, and the current so strong over the breakers, that even a small vessel could not attempt it without danger.

A ship falling in with this part of the coast during the months of April, May, and June, may make toward the land in safety, only taking care not to enter into less than 10 fathoms when off the cape; as it is probable that there will be a current setting south-eastward, at about two-thirds of a mile in the hour.*

St. ANNE'S BAY.—The large bay, formed between Cape San Thomé in lat. 22° 2′ and Cape Busios in 22° 46′, is named *St. Anne's Bay*. The distance between these points is nearly 22 leagues. The bay is deep and spacious; in rough weather the surf is violent, and the broken water runs up a long inclined plane. Mr. Luccock says, when the sea is serene, and the ripple comparatively light, it eats away the sands, and forms a flatter beach, with a perpendicular boundary, wherein the laminated appearance of the sand is remarkable. To the southward the shore is covered with shingles, and when it meets the high rocks beyond the river Una, in the S.W. part of the bay, it becomes bold, stretches to the eastward, and forms the point of *Buzios*, called in some charts *Cowries Point*. Near the mouth of the Una is the small secure bay of the *Armaçaõ*, or *Armazem*, affording refuge to vessels baffled in their attempts to double the cape, and when the wind blows hard from the East. The entrance is between two small rocky islands, called from their different appearance, the *Beautiful* and the *Ugly*. The anchorage lies to the south-eastward of the entrance.

The *Morro of St. Joaõ*, on the North bank of a river of the same name, is a conspicuous mark for the bay of St. Anne. Its situation is lat. 22° 32′ 26″, lon. 41° 59′.

Within the bay, at the distance of 15 leagues from Cape San Thomé, are three islets, named the *Islets of St. Anne*. These, seen from S.S.W. and N.N.E., appear united. The southern isle is the highest, and the lowest is to the East. According to the pilots the channel between them and the main is so safe, that you may here repair any damage, and careen the vessel if required. The depth to the southward of the isles, at 4 or 5 miles from land, is from 17 to 27 fathoms, oazy bottom.

From the Barra de Furada towards St. Anne's Islands the depths are regular, there being 9 or 10 fathoms of water, sandy bottom, within 5 or 6 miles of the land. At 4 or 5 leagues from the coast are from 20 to 22 fathoms, muddy bottom. This sort of bottom extends across to Cape Buzios, with 29 and 30 fathoms; a change to sand is a proof of approaching the land.

---

* On the 29th of November, 1834, the Brasilian frigate *Principe Imperial*, in steering S.W. by S. in the lat. of Cape S. Thomé, and lon. 40° 30′, at 8 a.m. sounded in 32 fathoms; at 3^{h} 15′ p.m. in nine, and in 3^{h} 20′ in six and a half five; the ship running between 5 and 6 knots, a dark, squally morning, with all sail set. No time was lost in shortening sail, and the small bower anchor cut adrift, when the ship was in half four. Her draught was 22 feet, and a heavy swell on at the time.

At daybreak the shoals of S. Thomé, breaking very high, bore W. by N. 1 mile distant. At this time it cleared away, and they could see nearly 30 miles from the mast-head, but no land was to be seen.

On the ship running out E. by N. at the rate of 2 knots for three hours, the soundings were very irregular, from 5 to 7 and 8 fathoms, and then lessening to 5 and 4½, sand. Off the shoals soundings were obtained in 26 fathoms, after having run off at least 20 miles.—*Naut. Mag.*, April, 1825, p. 193.

"—— I feel satisfied that no shoal on which a vessel could ground, over which the water would break, lies so far from the land as the one mentioned in the *Nautical* (as above), on the authority of the officers of the Brasilian frigate *Principe Imperial*. With a foul wind, I stood in on the parallel of the shoal, with the lead going carefully and regularly. The soundings were not very regular, but we carried deep water far within the position where the shoal is represented to be, and with a good lookout could see nothing indicating a shoal, although there was a fresh breeze blowing at the time. I also, when at Rio Janeiro, questioned several Englishmen, commanding the Brasilian steamers trading on the coast. One of them, in particular, a well-informed, careful man, showed me his chart, with many tracks well within and over the position of the shoal, and declared his firm belief that it does not exist. I would not, however, have it erased from the charts. Detached shoals are very difficult to find, and the navigator will do well to pass its parallel with caution, particularly in the night."—"*Mexicano*," *Naut. Mag., Dec., 1842, p.* 801.

Off the N.E. part of St. Anne's Isles are several barren rocks; on the N.W. side of the isles is anchorage, in 7 and 8 fathoms, well sheltered from easterly and S.E. winds, but exposed to the S.W. and N.E., but with the latter there is seldom much swell. The proper route to this anchorage is by the S.W., through a clear passage, with 10 and 12 fathoms, close to the isles, near which is the deepest water.

From off the North end of the largest isle a sandbank stretches to the S.W. and W.N.W., with 3 to 5 fathoms over it, the greatest depth being at above halfway across the passage toward the main. This, therefore, impedes the passage from the N.E.; but the ship may beat out of the S.W. channel. Large vessels attempting the latter should carefully keep the S.W. end of the larger island to the eastward of S.E., because the water shoalens suddenly on the S.W. side of the bank, and likewise toward a sandy beach on the large island.

About St. Anne's Isles the soundings are regular, excepting on the bank which extends westerly from the North end of the larger island. This bank is steep-to on both sides, the water suddenly shoaling from 7 to 4 and 3 fathoms, bottom of mud, but on the outside of the islands sand only.

From the anchorage, in 7 fathoms, at three-quarters of a mile from the sandy beach on the large island, the bearings are, the S.W. point of the large island South; the northern part of the same, E. ½ S.; the outer point of the S.W. island, N.N.E.; and the islet Ferro, at the entrance of Macahe river, N.W. by W. ½ W. Large ships should bring up farther to the southward, keeping the S.W. point of the large isle about S.E. 1 mile, where there will be found 7 or 8 fathoms, at a sufficient distance from the shoal.

There can be no difficulty in gaining the anchorage at any time; only recollecting that the passage to it from the N.E. is hardly of sufficient depth for large vessels.

About the middle of the sandy beach of the large island there is a passage through the trees to a well of scanty and indifferent water; but firewood may be obtained here in any quantity close to the beach.

PILOT OR JERVIS BANK.—Off Cape San Thomé there lies a bank of soundings found by H.M.S. *Pilot*, Captain Jervis, which we have named as above; the following are the particulars:—" On December 6, 1843, a.m., running for Rio Janeiro, found the water very much discoloured, sounded in 35 fathoms, sand; at 10^{h} sounded in 25 fathoms; at noon, lat. 21° 44′ S., lon. 39° 35′ W., then 16½, shoaled the water gradually, until we had in the starboard chains 15 fathoms, and in the port chains barely 9 fathoms. This continued until 4 p.m,, and then shoaled to ½ 12 fathoms, going 3 knots, breeze increasing; then deepened to 16 and 17 fathoms, and shoaled again to 12½; at 4^{h} no bottom with 20 fathoms, at 5^{h} leadsmen in. Lead hove every half hour till midnight; Cape Frio bearing at noon S.W. by W. ½ W. 140′; Cape San Thomé, W. ½ S., 80′; Espiritu Santo, N.N.W. ½ W. 109′."* This is the account we have of it; but the given bearings place it several miles to the South and East of the latitude and longitude stated. We have, therefore, marked the position as doubtful on the chart.

SAN JOÃO DE MACAE, or MACAHE.—In the bay within St. Anne's Isles is the village of *Macahé*, situated between the northern bank of the river Macahé and the sea beach. It consists of about 150 houses, neatly painted and whitewashed; for the most part small ones, and of a single story, with a few of superior size and pretensions, on a rising ground, near the mouth of the river; where also, near the summit, stand the church and flagstaff. The mouth of the harbour is not more than 70 yards broad, and unfit for the entrance of vessels of more than 200 tons. If the flag be hoisted, it is a signal that the entrance is safe. In going in, a vessel must steer close to the South side of the rock; and when she comes abreast of it, should let go her anchor, with about 15 fathoms of cable. If she overshoot this berth, she must put the helm hard a starboard, and run between the southern point, where there is a channel 8 feet deep and 2 miles long, with remarkably clear water. A little South of the mouth of the harbour, and close to the shore, lies a ledge of rocks, which must be carefully avoided.

The mouth of the river Macahé bears N.W. by W. ½ W. from the largest St. Anne's Isles, with the islet *Ferro* off the entrance, a barren rock with some bushes upon it. There are two or three rocks at about three-quarters of a mile from the islet, over which the sea breaks, but there is a passage on either side.

---

* *Nautical Magazine*, April, 1844, p. 243.

In the river, water may be obtained in any quantity; and a supply of refreshments, by giving two or three days' notice, as they must be procured from the interior country.

At times the water from this river, on running toward the S.W. passage of St. Anne's Isles, appears much discoloured, like that of a sandbank; but with a change of wind it resumes its proper colour. Such changes in the colour are attributed, not to shoals, but to rains in the interior, and the operation of the wind.

The Morro of San Joaõ, or St. Joam, may be easily known by its insularity on the coast, the undulation of its summit, and its distance from the chain beyond it in the interior. Its lat. is 22° 32′, in lon. 41° 59′.

At 20 miles N. ¼ W. from this morro is seen another hill, very high, and surmounted with a peak remarkable for its leaning toward the North. This is the *Frade* (Friar) of *Macaé*, or *Macahé;* it stands in lat. 22° 12′ 2″.

ANCORAS.—At 7 leagues S. by W. from St. Anne's Isles lies the group called the *Ancoras*, or *Anchor Isles*. These consist of two islets and a large white rock lying to the southward of the inner one, and connected to it by a reef. The outer islet is 5 miles E. by S. from Cape Busios, and between the islets is a channel of 23 and 24 fathoms. The easternmost isle resembles a cardinal's hat. Small vessels, it is said, may pass between these islets and the land; and it is admitted by the pilots that the depth of water in the passage may allow vessels of every class to pass through.

To the northward of Cape Busios is the little isle *Branca*, or White Isle; then follows a beach of sand, which ends at the Morro of St. Joaõ, or Joam, with two or three small rivers, and the islet *do Ferro*, a barren rock, with some bushes upon it, as already described.

PAPAGAYOS.—The continental coast between Cape Busios and the *Isle Frio* forms a bay called *Papagayos*, or *Parrot's Bay*. The bearing and distance between its extreme points are S.S.W. 14 miles. A great portion of the bay is occupied by a group of islets and rocks, which do not appear to have been accurately surveyed.

At about 6 miles to the northward of the isle Frio, and at the North end of a low sandy beach, are a small fort and flagstaff, on the South side of the entrance of a little river, which falls down from the village of Papagayos.

CAPE FRIO is a high and rugged promontory, the south-western extremity of an isle bearing the same name, which forms, on its N.W. side, a convenient harbour, *Port Frio*, affording good shelter, although it is open to the N.E. The summit of the isle is in lat. 22° 59′ 55″, lon. 41° 56′ 30″.

FRIO ISLE, which forms the S.E. side of the harbour, is nearly 3 miles in length from N.E. to S.W., and 1 mile in breadth. Great part of it is covered with an almost impenetrable wood. Beautiful flowers abound in every part, and these are not limited to the small class of plants, as there are large trees covered with the most luxuriant bloom; but there are also reptiles in most extensive variety, from the alligator to the green lizard, and snakes from 1 to 30 feet in length, many of which are beautifully variegated. Beautiful birds also abound, but few of them sing; and there are myriads of insects, many of which are distressingly troublesome.

The Isle of Frio may be seen under favourable circumstances at 15 leagues off. When bearing from the East or the West it presents two mountains, one of which is 1,570 and the other 1,300 feet high, above the level of the sea: the southern is the smallest, both in height and breadth. On a N.N.E. and S.S.W. bearing these two mountains seem to form one mass, with a double summit, like two small points; at the same time will be seen a little conical islet, at 1 or 2 cables' length to the E.S.E. of the cape.

On all the shore, at the distance of a mile, from the North to W.S.W. by the South are found from 27 to 45 fathoms of water, bottom chiefly of oaze.

Captain Mason, of H.M.S. *Blonde*, says:—The cape is well known as one of the boldest and cleanest headlands in the world, high and remarkable in its outline, once seen easily recognised, readily made out from the views inserted in most of the current charts, and has regular soundings, extending from it for a considerable distance. Yet, because one or two unaccountable wrecks have taken place in its neighbourhood, it is frequently decried and dreaded as a formidable and dangerous promontory, instead of being regarded, *as it really is,* a faithful and intelligible landmark and monitor."

An official notice, dated Rio Janeiro, 28th of July, 1836, and given by order of the Minister of the Marine, signified that, from the night of the 12th of that month, a *Lighthouse*, called that of Cape Frio, would show a light, interrupted every two minutes by an eclipse of equal duration, instead of an ordinary fixed light, which had previously been exhibited. The light is visible, in very clear weather, at the distance of 41 miles.[*]

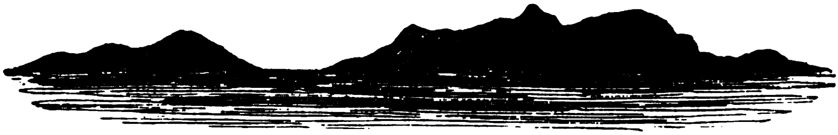
PORT FRIO, or the harbour, is more than a mile in extent each way, and its depths are from 19 to 4 fathoms; but in the centre, 12 to 16 fathoms. Its great entrance is at the East end, on the South side of an elevated islet, named *Ilha dos Porcos;* this entrance is about two-thirds of a mile wide, and its depths are 25 to 15 fathoms, bottom of fine mud and sand. The entrance from the S.W. is very narrow, but has a depth of 10 and 12 fathoms, and there is anchorage almost immediately within it, for large ships, in 7 to 10 fathoms; farther in is a bar, on the shoalest part of which are only 10 and 11 feet; so that this passage is fit for small vessels only.

The harbour is commodious, and secure against all winds, excepting N.E., but even with the latter you may be sheltered by the little isle *dos Porcos* (360 feet high), which lies on the North side of the entrance. This anchorage, wherein the bottom is of good holding ground, is useful to the coasters, who can go out by either of the passes, according to their destination northward or southward, and the direction of the winds.

In time of war a signal post or telegraph is placed on a mountain to the West of the cape, and which, communicating with Rio Janeiro, denotes what is passing here.

A small fort, with four guns, stands on a rocky point between two sandy coves on the N.W. side of the harbour, and which entirely commands the principal entrance to the anchorage. A little within this fort is a village, occupied mostly by fishermen. There are some fine sandy places here for hauling the seine, which appears to be the chief occupation of the inhabitants.

Water may be had from wells in the coves on the North and N.W., as well as on the island near its West end, where huts may be seen. The tide flows here, on full and change days, until 9^h, and its vertical rise is about 4½ feet. *Variation* of the compass, 2½° E.



Cape Frio bearing W. by S. 25 miles.

V.—CAPE FRIO TO RIO JANEIRO, INCLUSIVE.

[For some remarks on the Winds upon the coast and at Rio Janeiro, by Captain Hewett, see pages 1, 2, and 3.]

The assumed situation of Cape Frio, as we have shown, is lat. 23° 1′ 18″, and lon. 41° 57′ 30″. This rugged promontory is the most remarkable headland, as well as the most important landfall, on all this part of the coast. From off this cape to the *Sugarloaf*, on the West side of the entrance to Rio Janeiro, the course by compass is nearly West, and the distance 63 miles. The land between is mostly low and sandy; but at a distance from the beach it rises to a series of elevated and uneven mountains, an appearance interesting and picturesque.

---

[*] The situation of the lighthouse was not defined, but that it is badly situated there can be no doubt. It is frequently invisible, and has caused the following remarks:—"Running down towards Cape Frio, it is advisable to keep about 10 miles to the southward of its parallel, in order to prevent getting into the bay to the northward of the cape; and at night *no one must trust to see the light at any distance*, it being placed so high as generally to be enveloped in the thick fog or haze which hangs over the high land, particularly in summer. I made the land of Cape Frio in the night, running in with the lead going. We struck soundings, and saw the land low before the light, and it was only when very close that it could be discerned twinkling through the haze. Even when seen, it was very much doubted whether or not it was a star. Many have made the same remark respecting the light, and it has been represented to the authorities. It is rather surprising, therefore, that they have not altered its position. The expense of removal, however, and the cost of re-erection, are, I presume, serious obstacles with a poor government."—*Nautical Magazine*, Dec., 1842, p. 803.

At about half a mile from the extremity of Cape Frio, which is about halfway between the S.W. and West point of the island, is a cove in which H.M.S. *Thetis* ran ashore, and was wrecked, in the night of the 5th of December, 1830.

The Thetis, having completed her period of service on the South American station, sailed for England from Rio Janeiro on the preceding day. Ships of war returning home from South America being generally freighted with treasure, the Thetis had on board 800,000 dollars. The weather, after she had sailed, proved tempestuous, and the wind blowing strongly from the eastward, the effect, as supposed, was a current that was fatal to the ship.

An interesting detail of subsequent events, and the singular means employed for recovery of the treasure, is given in the *Nautical Magazine*, March, April, and May, 1832, illustrated with a plan, by Lieut. Kellett, and two curious engravings. Of the 800,000 dollars, 620,000 were brought up from the bottom of the sea.

According to the report of the British officers, during their stay here for the recovery of the treasure, a small village was constructed near the cove, but whether it may continue seems uncertain. Roads were also cut leading to the cliff where the Thetis was lost. Previous to this event the island was totally uninhabited. The village, called *St. Thomas*, stands on an acclivity steeper than Portsdown hill, in England, at about 100 yards from the beach on the West, with evergreen shrubs bearing flowers, in the intervals between the houses; but it must be added, that half of the men employed here were at one time lame from the kind of flea called the *jigger*, so we may conclude that, fine as it is, the island will never have a numerous population.

Ships bound to Rio Janeiro, when approaching Cape Frio by night, with the wind easterly or S E., must be cautious not to run into the bay to the northward of the cape; such mistake having proved fatal to several ships. This, however, can never happen in future, while the light on the summit of the island is visible. A considerable swell sets in with E.N.E. winds, which are most prevalent.

CAPE NEGRO, at 12 leagues to the West of Cape Frio, is the first remarkable prominence in that direction. It is formed by a small hill, the extremity of a range of mountains extending to the North, and is covered with a dark verdure, hence its name, and may be readily known. Being steep-to, it may be approached safely. Within 3 miles of it the depths are from 18 to 27 fathoms, bottom of soft oaze.

Between Cape Frio and Cape Negro the sinking of the land is remarkable, presenting no object on the coast, excepting here and there a few little hillocks on a flat, sandy shore, with some scattered bushes. One of these sandhills is distinguished by the ruins of a church standing on its summit, and dedicated to *Nossa Senhora de Nazareth.* This is about 3½ leagues E.N.E. from Cape Negro. Between this church and Cape Frio, within the low, flat shore of *Maçambaba*, is a lagoon, which extends 7 leagues, and has small openings to the sea.

At about 2 leagues from the coast the depths are from 27 to 36 fathoms, over a good bottom of oaze. At 10 leagues are 68 to 80 fathoms, coarse sand, rocks, and oaze.

Two islets, named the *Maricas*, lie at the distance of 13 miles S. 79° W. from Cape Negro, and nearly 16 leagues West from Cape Frio, at about a league from the coast. They are of moderate height, steep-to on the South side, and may be approached safely. If, on the approach of night, or under particular circumstances, a vessel cannot reach the entrance of Rio, she may advance to and anchor here.

On the 24th of November, 1825, H.M.S. *Jaseur*, Captain Martin, anchored off the western side of these islets, in 17 fathoms, coarse sand and mud, with the rock off the southern island bearing S.E., the passage between the isles, E.S.E., the northern end of the isles, E.N.E. ½ E., and in a line with Cape Negro. During the mornings of the 24th and 25th the boats were employed in sounding round and between the islands; in every part was deep water, and no dangers but what were in sight. The general depth to the westward of the islands was 10 and 12 fathoms close to the beach, with 14, 15, 16, and 17 fathoms, at the distance of a mile to a mile and a half. Between the islands and main are 13, 12, 11, and 10 fathoms, close up to the beach.

As this place is sheltered from the S.E. round by the North to W.N.W. and more West, with a fine sandy bottom, it may be considered as safe when the wind is to the northward and eastward, or to the northward and westward.

On the eastern side of the isles the sea commonly breaks with great violence, so that landing there is very difficult. The best place is near the N.W. end of the larger isle. In a small sandy bay, on the low part of this isle, is a well with good water, but it cannot be obtained without trouble in getting it off.

CURRENTS.—The general prevalence of the currents in the vicinity of Cape Frio appears to be to the southward, but varied to the eastward and westward, according to the strength and direction of the wind; and westward of the cape it is, *at times*, found setting to the N.E.[*]

Having previously given the general observations on the Brasilian Currents, made by MM. Roussin, Hewett, and Lindley, it may not be amiss to introduce here an extract from Major Rennell on the same subject.

The Stream Current of the Eastern Coast of Brasil "is of inconsiderable breadth, till, increased by the accession of drift current by the S.E. trade, it arrives in 16° or 17° South, where, to the distance of 250 miles from the coast, the current runs to the South of S.W., and gradually declines to the southward till it becomes S.S.W., or nearly along shore to Cape Frio, where its rate was found to be 30 miles per day, at 200 miles from the shore. Here by the fall back of the land to the W.S.W., the direct current is thrown farther off shore; and, as generally happens in such changes of direction of the coast, a *counter current* in the bay runs to the N.E. within Cape Frio.[†] Farther to the South, in 30° and 32°, the current is found again to run more westerly, conforming to the trending of the coast, at the rate of 15 to 20 miles per day, and is found at 250 miles from the coast, extending to the North of the river Plata.

"*The Brasil Current South of Cape Frio* rests on the authority of Lord Anson's journal, Captain Cook, and the Russian Captains Krusenstern and Lisiansky; and the *counter current*, between St. Catherine's and Cape Frio, on that of Captains Krusenstern and Lisiansky, and Captain Torin, of the East India service.[‡]

But, upon the whole, no dependence can be placed on the general set of the current; and it is clear, from what has been already said, that it is always uncertain. When the wind is fresh between the North and East it sets strongly to the southward and westward, and with a wind from the S.W. the current will set with equal strength north-easterly; the rate being in a ratio with that of the wind.

A bottle from H.M.S. *Maidstone*, on her passage to Bahia, in lat. 18° 20′, lon. 34° 56′, 24th of April, 1832, was taken up on the beach of *Poxim*, about 500 miles N. 8° W., *true*, from the spot in which it was dropped, 7th of June, 1832. Its daily rate cannot be known; but the mean of the drift must be, at least, 10 miles per day. This was in the southerly monsoon, between the parallels of 10° and 18½° S.

RIO JANEIRO.—The mouth of the harbour of Rio Janeiro lies between two islets, *Paya* and *Maya*, to the East of it, and a bold point, surmounted by the *Gavia*, a remarkable mountain on the West. In front of it are the islets *Redonda and Raza*, within and westward of which are several other islets. From Paya to Gavia the bearing and distance are about W. ¾ S., 11 miles.

The islet Raza is low, and appears from the East like a slipper, with the sloping side northward. It is now distinguished by a *lighthouse*, which was first lighted on the 31st of July, 1829. The light is so elevated as to be seen nearly 10 leagues off. It makes a revolution in every three minutes, and presents alternately a brilliant and a *red* light. The utility of this light is too obvious to require comment.

---

[*] Some hours before, and during the East and N.E. winds the current runs past Cape Frio to the southward, causing an easterly eddy along the South shore, which reaches nearly to Cape Negro.

With the wind from West to South, and previous to a change in that direction, an easterly current passes the cape, and extends some distance to seaward. The rate, in both cases, is from half a mile to a mile and a half in the hour.—*Capt. Hon. F. de Roos, R.N.*

[†] To this current may be mainly attributable the melancholy catastrophe of H.M.S. *Thetis*.—Ed.

[‡] Major Rennell's "*Investigation of the Currents*," pages 137, 138.

very near to the battery of Santa Cruz. You may safely approach still nearer to the opposite side, but the first direction is the most followed, it having the treble advantage of leading a vessel near to the fortress, of answering the signals made therein, and of keeping clear of the little isle *Lagea*, with its fort, on the opposite side of the channel. Thus also you will avoid the effect of current, which sometimes runs to the N.W., when the tide is rising.

The passage between the fort of Santa Cruz and that of Lagea is the only one frequented; that between the latter and Point St. Joaõ is never used; not from want of depth, but because it is narrower, and exposed to shifting winds from about the Sugarloaf and other high lands. Here also the current is irregular, and the ground rocky.

From about 3 cables' length off Fort Santa Cruz the direct course to the anchorage for ships of war is N. 32° W. [*N. 35° W. true*], until you are E.N.E. of the fort of *Vilganhon*, which you pass safely at the distance of 3 cables. From this spot you will steer for the *Ilha dos Ratos*, or *Rat Island*, and, having now arrived before the city, you may choose your anchorage in from 19 to 10 fathoms, bottom of mud; only observing not to bring the Sugarloaf to the westward of Fort Vilganhon. The best place for ships of war is to the E.N.E. of the palace, to the South of an imaginary line from Rat Island to the principal church of the city; the bottom, in from 14 to 18 fathoms, is excellent. Here you will avoid a small rocky bank, lying at 2½ cables E.N.E. of Rat Island.

The *Isle Cobras*, or *Serpent's Isle*, is the fortified isle to the West of Rat Island. If from the flagstaff of Fort Vilganhon a line were drawn to the Isle Cobras, it would separate the depths proper for large vessels from those of 4 to 2 fathoms, which are frequented only by coasters and merchant vessels.

The anchorage for merchant ships is to the N.E., and adjoining to the city. The larger ones arrive at it by passing the Isle Cobras, and are separated from the Men-of-War Road by a shoal bank, on which the sea breaks at low water, spring tides, when the winds from the offing are violent.

Vessels commonly moor North and South in the bay of Rio Janeiro; but it seems preferable to moor N.E. and S.W.; this direction, being nearly that of the flood and ebb, renders it easy to lay the vessel athwart the land and sea breezes, which are almost the only predominant winds. This will in summer be found necessary; for at that season the heat is at times almost insupportable. A hawser, carried alternately from one buoy to the other, according to the wind, will gain this advantage, so important for the salubrity of the vessel; the flood anchor to be on the larboard, and that of the ebb on the starboard side.

The land and sea breezes ordinarily divide the 24 hours. The first begins in the evening, continues all night, and ends at about nine or ten o'clock in the morning. One hour of calm succeeds this, and generally at about 11 the sea breeze penetrates into the bay, and continues until sunset. The strength of these breezes is not uniform; and at times there are total interruptions; the calm, at times, will prevail for days together, or be varied momentarily by breezes without any fixed direction; but such circumstances are of rare occurrence.

The Tides are not regular or of equal duration, as the ebb generally runs much longer than the flood, more especially after heavy rains. The ordinary velocity of each rarely exceeds seven-tenths of a mile in the hour; but at times it may run at the rate of a mile and three-tenths, principally during the ebb. The time of high water, on the days of full and change, is at 2^h 45′, and the vertical rise, 4½ feet; neaps only 3 feet.

The safety of the anchorage is nearly uniform, and is very rarely disturbed by winds causing serious accidents.

LANDING PLACES, &c.—There are many landing places at the kays before the town. Some are simply slopes or hardways, others have stairs. The convenience of their use depends on the state of the sea, which is seldom so agitated as to impede the communication between the shipping and the shore; but the filth of the town at these places renders the approaches at all times disagreeable.

Vessels in the Road generally take their water from a large fountain erected on the kay of the *Place do Mar*, before the palace; but this water is not very wholesome, as it frequently causes dangerous colics in the beginning of its use.

The BAY, or rather GULF of RIO JANEIRO is very spacious, and one of the most magnificent in the world. Its extent in diameter is from 3 to 4 leagues, in several directions between mountains of majestic elevation, covered with the richest verdure, and terminating in an easy declivity, occupied by numerous villages down to the sea. Plantations of all sorts, handsome country houses, surrounded with trees, many isles, woody and inhabited, ornament and diversify the surface and the coasts of this little inland sea; and there is not on the globe a more beautiful residence, or an aspect more imposing and agreeable.

The anchorages for large vessels do not extend far to the North of the parallel of the city; but all the bay is navigable for a multitude of small vessels or country boats, which form an animated scene.

From observations in the bay, the variation of the compass was 3° 40′ E. in June, 1819.

A stay made in the Road, as in most roads subject to a high temperature, causes on the ship's bottom the adhesion of a great quantity of barnacles and other marine productions, which vegetate quickly, and soon cover over all the sheathing; these injure the copper, and impede the velocity of the vessel; they must therefore be frequently cleaned off.

Fish are not abundant, owing to the number and motion of the vessels; and the consumption of those taken is not safe, in consequence of a great number of vessels being sheathed with copper. Shellfish, and oysters in particular, ought to be avoided.

On LEAVING the ROAD of Rio Janeiro the most simple precautions only are required; it will be sufficient merely to attend to the land breeze and the ebb tide, allowing them to carry you along; even the ebbing is not essential if the breeze has that strength which it usually acquires during certain hours daily.

To be better prepared for getting under weigh, vessels frequently on the evening before their departure get on the side of the bay which faces the town, by which they avoid any obstruction in the Road, properly so called; and some take advantage of the strength of the land breeze, but this is not really necessary, for a vessel may easily set out from any part of the usual anchorage.

The route for going out is the same as that for entering; passing at 3 cables' length to the East of the Isle Vilganhon, and at the same distance on the same side of Fort Lagea, and ranging within hail of the fortress of Santa Cruz, taking care in this track to keep over to the eastern side rather than the other; these are the only requisite precautions.

As you generally weigh anchor in the morning, it is probable that you will have the advantage of the land breeze at least for four hours; this will enable you to pass all the isles in the bay; and, having arrived here, you may tack according to circumstances. Should you experience a calm between the land and sea breezes, before you get without the islands, it will be proper to anchor, choosing a favourable position, so as to get under weigh again with the first breeze that ensues.

Rio Janeiro, the capital and seat of the Brasilian government, is a large and fine city, of which the population, in 1819, amounted to 120,000 persons. It possesses, in abundance, all the resources which mariners can require. Vessels may here be careened, remasted, and furnished with all things requisite; but all is expensive, and repairs are very dear, on account of the high price of the materials of workmanship. Provisions, though plentiful, are not cheap, cattle excepted; and the flesh of these is not only of indifferent quality and flavour, but frequently unwholsome; a disadvantage common in hot climates, and in particular on the greater part of the Brasilian coast.

CAPTAIN HEWETT'S DESCRIPTION and DIRECTIONS are as follow: "The immediate entrance of the harbour of Rio is known by two lofty peaks, one on either side; the western resembles a sugarloaf; it bears that name, and *differs from every other on the coast* (for there are many), by the inclination of its summit to the *westward.*

"If night be too far advanced, a preference ought to be given to remaining under weigh, rather than to anchoring without the harbour, the ground being rocky, and much exposed to a heavy rolling swell, which increases as it approaches the bar, the shoalest water on which is but 6½ fathoms. The certainty of the sea breeze before noon of the following day, and the tempestuous and general violence of the land breeze, accompanied by heavy rain, &c., particularly at the full and change of the moon, renders necessary the precaution of standing off and on from and to Round Island; for to it the violence of the squall seldom extends.

"The FLOOD TIDE in the HARBOUR is of shorter duration, and of less force than the ebb, against which and a strong land breeze our ship, the *Inconstant, turned in,* to the astonishment of the Portuguese; an effort never before attempted. After violent rains the rise of the water in the harbour, has very little influence over the ebb tide, except diminishing its strength. The ebb has been known to run a whole day without intermission; the current strongest on the western side; but an eddy flood will sometimes be visible on the eastern side, when the water is discovered to rise.

"The ENTRANCE of the HARBOUR, between the FORTS SANTA CRUZ and ST. JOAÕ, is in breadth three-quarters of a mile. The passage between St. Joaõ and *Legea*, or *Square Island*, situated immediately in the entrance, should never be attempted, although the greatest depth of water is to be found there; the narrowness of the channel, the likelihood of the wind's becoming variable under the Sugarloaf, the irregularity of the tide, with the rockiness of the bottom, if compelled to anchor, render it dangerous, if not impracticable. The true channel is on the eastern side of Legea Island, to abreast of which, from the bar, the water gradually deepens from 6½ to 21 fathoms; and when a little past it, the ship's head being N.N.W., soundings are lost for a short time with the common handline.

"*Leaving Fort do Vilganhon* (also on an island) on the left hand, the best anchorage is obtained *for vessels of war* abreast the city, with the flagstaff of Vilganhon just open to the westward of the Sugarloaf. By taking this precaution, a small bank, very dangerous for cables, will be avoided. The bank is situated about 2½ cables' length from *Ilha dos Ratos*, or Rats' Island, in an E.N.E. direction; it is circular, about a cable's length in diameter, and very rocky; the mark for 4½ fathoms, which is the shoalest water, is Ilha dos Ratos and the Great church in one, and Vilganhon flagstaff on with Theodosia battery, on Point S. Joaõ; so that its vicinity to Ilha dos Ratos renders precaution necessary in mooring. The best bower, with a good cable, should be laid down to the westward, in order to preserve an open hawse to the entrance; a stream cable bent on to the small bower anchor, and taken in at the stern port, will preserve a free circulation both from the sea and land breezes, and the ship's head will thus be directed to the only points of the compass from which the wind can be expected to blow fresh, and which are from N.N.W. to S.W.

"MERCHANTS' ROAD.—*A bar of sand*, with some rocks, extends opposite to the city, the outer edge, nearly in a direct line from Vilganhon to Ilha dos Ratos, and ending at the N.E. point of Ilha dos Cobras; this bar is passable for boats only; but within *it* all merchant vessels, that there is room for, discharge and take in their cargoes; the only passage to it is round the North end of Cobras, near which are the arsenal and Brasilian vessels of war."

DIRECTIONS BY ANOTHER OFFICER.—"In entering the harbour take care to pass within hail of Fort Santa Cruz, in order to answer any questions that may be asked. There is plenty of water close to the rocks. Then proceed up to Fort do Vilganhon; below or opposite to which bring to, or come to anchor, and allow no boats to come alongside but those of the Government, until you have received *pratique*, when you will be permitted to proceed higher up the harbour, round the East end of the Isle Cobras, to the place of anchorage for merchant ships.

"There are no pilots to be met with off the coast or harbour; for, as there is no hidden danger, they are not requisite. Whilst the sea breeze is strong enough to enable ships to overcome the ebb, they may safely enter by night or by day. But on entering at night the Fort Santa Cruz makes a signal to the city,* which is not to be understood as interfering with the vessel entering.

"The port regulations require all vessels to bring to a little below Fort do Vilganhon; and any one attempting to pass before she has been visited will be fired at, and the commander liable to imprisonment, besides paying a fine for each gun so fired.

"Besides the lighthouses erected on the Isle Raza, a small light is put up every night in the fort of Santa Cruz. It has been noticed that the time of high water is at 2ʰ 30′ p.m., but it seems very uncertain.

DIRECTIONS for RIO JANEIRO, for vessels approaching from the *southward*, by the BARON ROUSSIN.

The approach to Rio Janeiro is *generally*, as we have shown, by Cape Frio, which is admitted to be correct during the northerly monsoon, and when advancing from the northward or eastward; but under other circumstances it will be disadvantageous, by losing time and prolonging the voyage.

---

* In 1820, of two guns and two lights.

For vessels from the southward, and during the southern monsoon, the *Ilha Grande*, the *Morro of Marumbaya*, and above all the *Gavia*, in the West, are the best objects of recognisance; as all these may be seen at a sufficient distance to serve as a guidance on the route, and an estimate of the distance to the anchorage.

On advancing, another good indication is the peculiar figure of the land, between the Gavia and Sugarloaf. When coming in from the offing, between the E.S.E. and S.W., the configuration of their summits presents, in a very remarkable manner, the figure of a man lying on his back from W.S.W. to E.N.E.; whereof the Gavia forms the head and the Sugarloaf the feet. When the tops of these mountains are free from clouds or mists it is almost impossible not to be struck with this appearance.

The Gavia, as already noticed, is situated at about 3 leagues W. by S. from the entrance to Rio Janeiro. Its summit appears flat, and rather larger than the surface below it, and which gives it the appearance of a ship's top. This mountain and the Sugarloaf, at 8 miles to the eastward of it, have been previously described.

On approaching Rio Janeiro from the southward soundings may be obtained at a considerable distance from the land, but at a great depth. At 10 to 15 leagues off they vary from 60 to 80 fathoms, and diminish gradually to the coast; the bottom is a mixture of sand, gravel, broken shells, rocks, and oaze or mud.

General Remarks on Rio Janeiro, by Captain J. W. Monteath, 1824.

"Feb. 29, 1824.—During the night the breeze continued fresh from the N.E.; at sunrise the high land of Brasil to the westward of Cape Frio, was in sight, bearing W.N.W.; at this time Cape Frio, although the nearest land, was not visible, being completely enveloped in clouds; these, however, soon cleared away, and the cape was seen, bearing N.N.E. ½ E., distant 20 miles. The wind here veered more to the northward; we therefore hauled in for the land to the distance of 2 leagues. At 10^h, bore up on a W. ½ N. course, the entrance of Rio de Janeiro (which is easily distinguished by the *Gavia* and *Corcovado Mountains* on the western land) bearing W. ½ N., distant about 10 leagues; the latitude, by observation being 23° 7′ S.

"March 1.—The wind was light from the eastward; at 2^h p.m. we passed the Marica islands at the distance of 2 miles. At this time the island Redonda was in sight, and presented, owing to the state of the atmosphere and refraction, a most singular appearance, that of a wine glass inverted.

"Between the Marica islands and the shore there is anchorage, at least for small vessels, as I saw a number of coasting vessels at anchor behind them; in going in they passed round a reef, which extends considerably East of them, and bore up for the anchorage, which is on the N.W. side of the islands.

"At 5^h p.m. we entered the channel between the islands Paya and Raza. At 7^h, we rounded the islands Paya and Maya (which lie to the S.E. of the entrance of the harbour,) at the distance of half a mile. The sea breeze now died away, and the wind became light and baffling; we, however, kept under weigh in expectation of passing the fort, with the assistance of the flood tide, but were disappointed, as the ebb tide ran strong all night, and also the two succeeding days. At 2^h a.m. came to anchor with the kedge, the weather calm, and the tide setting strong to the S.W. I should recommend, if the weather appears settled, to come to anchor at once when the sea breeze falls off, in preference to keeping under weigh among the islands, as I found that the anchorage is tolerably good, and the depth of water from 10 to 14 fathoms. If the vessel has a chain cable, I would come to with it in preference.

"At sunrise a breeze sprung up from the S.W.; weighed and made all sail; but, notwithstanding we had a fresh breeze outside, we could not get past the Sugarloaf, the high land intercepting the breeze; and it was not till 9^h a.m., when the regular sea breeze set in, that we were enabled to pass Fort Santa Cruz. At 9^h 30′ we were boarded by an officer from Fort Vilganhon, who ordered us over to the other side of the harbour until the visit was paid.

"Owing to the disturbed state of the country, no person is allowed to leave the vessel until visited by the officers of police, as well as by the health visit. The former was not received until next day. Passports are required, and strictly examined. The commanders of vessels, as well as passengers, are subjected to great inconvenience, being obliged to walk with the guard to the superintendent of police's office, a distance of 2 miles from the landing place, and afterwards to the judge of police's house, about a mile farther, to be presented. This I can vouch for is no easy task; especially in the middle of the day, the heat then being very oppressive.

"It is surprising to what an extent bribery is carried on by the officers of government, especially of customs. No business can hardly be transacted without a fee. These, during a vessel's stay, become very expensive, and form a prominent item in the charges of the port.

"On receiving the different visits, the vessel is allowed to proceed above Fort Vilganhon. By a late regulation, if you do not intend to discharge all your cargo, you must come to anchor in the Outer Road, below Rat Island; if otherwise, you must proceed to the northward of, but not to the westward of the Isle Cobras, where you must remain until you have been visited, and have received a certificate of discharge. You will then shift the vessel to the westward of the channel, between Cobras Isle and the city, where you remain until you have completed its lading."*

DESCRIPTION OF THE INTERIOR OF RIO JANEIRO, ETC.

Lieutenant Shillibeer, R.M., who published, in 1817, a very curious and interesting volume, describing the voyage of the *Briton* frigate to the Pacific Ocean, has in that work included a description of this harbour; and he says that the entrance, being narrow, and well fortified by nature, could easily be rendered impregnable. The Fort of Santa Cruz may be considered as the principal fortification. The battery at the foot of the Sugarloaf hill is of considerable extent, but so neglected, like several others alongshore, as to be nearly useless. The city, he adds, derives but little protection from its immediate fortifications; and the Island Cobras, notwithstanding its contiguity, is but little calculated to render it any.

There are wharfs and stairs for the purpose of landing at, but the most convenient is at the great square. The palace here was originally the mansion of a merchant; it is extensive, and has nothing particularly magnificent in its appearance to indicate its being the royal residence. At the bottom of this square is a very good fountain, which is supplied with water from the adjacent mountains, and conveyed from some distance by means of an aqueduct. The water is not good, and, on first using it, causes a swelling, accompanied with a pain in the abdomen. Ships may be supplied with considerable expedition.

It is almost impossible for a person, possessing the least reflection, to pass this spot without being struck by the contrast which must necessarily present itself to him. On the one hand, he may contemplate the palace of a prince, surrounded by courtiers and wallowing in luxury; on the other, slavery in its most horrible state.

Leaving the square, you enter a street of considerable length and width, in which the customhouse, the residence of the British consul, &c., are situated.

The houses are generally well built, some of the streets are good, but all exceedingly filthy. The shops are well supplied with British as well as all other wares; and, whether the vendor be English or Portuguese, he is equally unconscionable in his demand. Most of the streets are designated by the trades which are exercised by those who occupy them; as, in Shoe street, you find shoemakers; in Tin street, tinmen; in Gold street, goldsmiths; lapidaries, &c. Gold street is the most attractive, and is generally the resort of strangers, who are anxious to supply themselves with jewellery or precious stones, natural to the country: but it is not always that they are fortunate enough to succeed in obtaining them genuine; for, since the city has become the royal residence, it has attracted a host of English, Irish, and Scottish adventurers; and the Portuguese are apt scholars in knavery; so that, from any of them, you are now very likely to acquire a bit of paste instead of a diamond. The inns, though better than in many places, can boast of no excellence.

This city contains a considerable number of churches, but they are by no means splendid; and, excepting the chapel royal, which is adjoining the palace, there is little worthy of notice. The theatre and opera are attached also to the palace, but possess no particular elegance. The market is well supplied with every article, and is in so eligible a situation, that, with a comparatively small portion of trouble, it might be kept in fine order; but the people are idolaters to filthiness, and not less slaves to it than to superstition.

---

* The Port and Commercial Regulations, Tonnage Duties of the Brasilian ports and Rio Janeiro, will be found in the Appendix.

The trade of this port is very considerable, and from various countries. There is a Chinese warehouse of great extent; and, at certain periods, articles from China may be procured at a low rate. The cultivation of the tea plant has been attempted, but unsuccessfully.

The country for a considerable distance around is peculiar beautiful; the mountains high and woody; the valleys perfect gardens. The most delicious fruits are abundant. The quantity of oranges exhibited for sale in the orange market is astonishing. The same tree often exhibits, at once, the blossoms, the fruit in its primitive state, some half ripe, and the rest fully so, or fit for use. The pineapple is here in great perfection. In the neighbourhood are several botanical gardens, belonging chiefly to private individuals, and containing many plants rarely to be met with in England.

The harbour of Rio Janeiro is spacious; and, were the heat less oppressive, it might be esteemed as one of the most desirable in the world. There is a breeze from the sea generally about noon, which cools the atmosphere and renders it endurable.

Notwithstanding that the entrance is so narrow, the harbour increases to the width of 3 or 4 leagues, and in this gulf or basin are numerous small islands, some of them containing villages, others gentlemen's seats only. The greater part is shallow; so that, at a small distance above the island containing the British Hospital, it is not sufficiently deep for a vessel of any burthen to pass; but great trade is carried on by means of large boats. The whole of the islands in the gulf are very picturesque.

The DISTRICT of BRAGANZA, situated immediately opposite the city of Rio, or St. Sebastian, is also very fine. It contains the small town of Braganza, and a few villages along the coast. Sir Sydney Smith had here an estate of considerable extent, which was presented to him by the King of Portugal, in compliment for his services to the royal family and court.*

The British frigate *Alceste* visited this port on her passage to China; and in the journal of her voyage† we find the following animated description of Rio Janeiro.

"An opening between two extremes of land marks the entrance of the harbour; and here, on the right, is the Fort of Santa Cruz, and on the left, that of St. Joaõ. The ranges present in some places conical summits; and although one has especially obtained the appellation of *Sugarloaf*, it is rather from its superior precipitous height, than from being singular in its shape. At this distance the beauty of the scenery is derived principally from the extent and impressive variety of the forms assumed by the different ranges. Mountains, whose relative distances are marked by the position of the clouds resting upon their summits, form the back ground. Mr. Ellis says, on approaching nearer to the entrance, the scene became indescribably sublime and beautiful; the mountains that had formed the amphitheatre, on a nearer view, divided themselves into islands and separate headlands; several were thickly, though perhaps not loftily, wooded. Fortifications, detached houses, villages, and convents, occupied different positions; the eye wandered in rapturous observation over an endless variety of picturesque combinations, presenting a totality of wondrous scenery, the general effect of which must equally defy pictorial and verbal description.

"*St. Sebastian*, or the city of Rio Janeiro, when viewed from the church of the same name, appears to be built in a semicircle; the streets are generally at right angles. The public buildings are neither numerous, nor deserving of notice in point of architecture. The population is estimated at 120,000 souls, two-thirds of which are slaves, and the remainder consists of Europeans and mulattoes. The agricultural and other severe labour is almost entirely performed by slaves; for, until very lately, not only Europeans, but mulattoes considered themselves degraded by such employments. The mechanics were formerly all mulattoes; at present, however, the residence of the court has encouraged not only Portuguese, but other Europeans, to establish themselves as artificers.

"Thirty or forty English mercantile houses are established at St. Sebastian, and the export trade is almost entirely in their hands; their imports consist in English manufacture, and all the produce of Europe which can be required in Brasil; their exports from St. Sebastian are sugar, coffee, and hides; the cotton of Pernambuco being so superior, that but little of this commodity is grown in the neighbourhood. Rio coffee holds the third rank in the European market. Brasilian merchants are the growers of the raw produce, which is conveyed by them to the port, where it is sold to the English exporter. The customs at the port of St. Sebastian are stated to amount to £2,000,000 per annum."

---

* The present Emperor of Brasil was declared of age, and assumed the government, July 23rd, 1840.

† Journal of proceedings of the late Embassy to China, by Henry Ellis, Esq. London, 1818.

In the relation of the voyage of *Capt. Wm. F. Owen*, in 1822, it is again stated, the country around Rio presents not only the most varied and majestic scenery, but is entirely a garden of nature; every spot, even of the soilless rock, being covered with beautiful flowers.

"On entering the harbour," says Mr. Forbes, the lamented botanist, "the mind is at once struck with its magnificence and beauty. The vast expanse of water bordered with bright green, the numerous inlets and islands, the rich verdure of the hills, studded with villas, and the lofty chain of mountains, form a dark and distant background, and make altogether a picture more like the poet's fancy than a reality of earth."*

The land here is rich and well cultivated, and the oranges are perhaps the finest in the world. There is a peculiarity in the formation of these not generally known; it consists in the part where the seeds are formed being removed near the crown, and in some instances outside the pulp, but beneath the rind, giving it, upon the peel being removed, the appearance of two oranges. The part containing the seed is a kind of excrescence, into which is drawn all the objectionable portion of the fruit, leaving the legitimate production free from every impurity, and rendering it the most delicious in its kind.

Bota Fogo, about 3 miles from the city, in a southerly direction, is one of those beautiful inlets of which there are so many in the harbour of Rio Janeiro, and is the residence of many of the principal families, particularly the English merchants, who all have villas, either in the neighbourhood of Bota Fogo or Gloria. The scenery is extremely fine, commanding a view of the mouth of the harbour. Before vessels cross the bar they are seen by the inhabitants of Bota Fogo or Gloria, and again when they get inside the harbour, after passing the Sugarloaf and the three forts that command the entrance.

The aqueduct, or covered watercourse, that supplies the city, is a pleasant walk, and commands many fine and extensive views.

VI.—RIO JANEIRO TO SANTOS.

MARAMBAYA ISLAND, which begins at 9 leagues to the westward of the entrance of Rio de Janeiro, is 20 miles in length, and forms the large *Gulf of Marambaya*, which abounds in fish. Of this gulf the general depths within are 3 and 4 fathoms. It is bounded on one side by the main land, and on the other by the *Restinga* or Island. The latter is a narrow bank of sand, about 20 feet above the level of the sea. In most parts, especially near the middle, it is quite bare, in others it is covered with various creeping plants, which keep the soil together; it exhibits on its summit a little brushwood, and at its northern extremity some mangrove. Toward the sea it is steep, and the surf breaks against it with violence; toward the bay it is level and smooth. The latter portion abounds with shellfish and sand-larks; the herbage shelters many armadilloes; and deer, with other animals of chase, present themselves to the sportsman.

Marambaya, at the western end of this sandy track, is a single bold mountain, about 700 feet high. It has a church, and some good springs. The inhabitants subsist by fishing, and the produce of the few fields which they cultivate, without having much to spare.

Immediately off the East end of the Praya de Marambaya is the great point of *Guaratiba*, at which begins the range of mountains that surround the Gulf of Rio Janeiro. From this point, in clear weather, at 7½ leagues to the East, may be clearly seen the isle *Redonda*, off the entrance, and the steep shores, in streaks of white and dark green, which terminate the coast. You may equally see, at about 6 leagues to the E.N.E., the *Gavia*, the mountain which, from its remarkable form, cannot be mistaken for any other, and which is the surest indication of Rio Janeiro, on approaching from the southward. On proceeding thence toward Rio, no particular caution is required, and having come up nearly to Redonda, you may shape a course, according to the wind, between it and the neighbouring islets; recollecting only, before entering, that it is requisite to have a wind which will carry you in before night; such wind commences about noon, the time of day when the breeze sets in from the offing, almost always with sufficient force.

---

* A description of the town and environs is given in the narrative of Captain Owen's Voyage, *Vol. I. p. 38.*

The eastern point of Marambaya Island is separated from the main land by a small opening, through which boats only can enter into the gulf.

As the land of Marambaya is low, it should in thick weather be approached with caution. Circumspection is the more necessary, as a *Lagé*, or flat rock, surrounded by shoal ground, lies at 3 miles from shore, nearly off the middle of the isle, which should not, therefore, be approached nearer than to 4 miles, or in 22 to 30 fathoms of water, bottom of sand and gravel.*

M. Roussin, both in his Chart and Directory, describes the Gulfs of Marambaya and Gairosu under the general name of *Baie de Ilha Grande*, which he describes as having two entrances; the one to the East formed by the Ilha Grande, and promontory or beach of Marambaya, and the other by the same isle and Punta Joatinga. Both entrances have sufficient water for the largest ships. Entire fleets may enter and find shelter from all winds. The soundings vary from 27 to 6 fathoms, in great part of the surface: and, on several parts of the interior coast, wood and water may easily be obtained.

The **ILHA GRANDE**, an island 5 leagues in length, separates the entrances of the extensive harbours of MARAMBAYA and GAIROSU, as shown on the chart. The interior land is high; and the greater part of the coast presents a double range of mountains. On leaving Rio, when bound this way, the mountain of Gavia serves as a guide to the westward. A sufficient offing must be given to the land after passing this point, as the current frequently sets strongly on the shore to the West.

The eastern end of the ILHA GRANDE lies at the distance of 47 miles from Point Gavia, and opposite to the bluff point of Marambaya Island. The channel between it and the latter is 5½ miles wide, and very safe for ships of any size, which may take shelter here. The soundings are from 15 to 9 and 7 fathoms. Fresh water may be obtained from the springs at the West end of Marambaya Island, and wood may be had from the other islands in the bay.

On the eastern side of the Ilha Grande is anchorage, in the several little bays named *Palmas*, *Albroo*, and *Eschella*, for ships of any burthen. The first of these, from the East, is Palmas Bay, and in this a ship may lie land-locked in from 6 to 8 fathoms. The other two are smaller, in both the depths are from 5 to 7 fathoms.

Within the Restinga or Isle of Marambaya the soundings eastward diminish from 8 to 3 and 2 fathoms. From the *Punta do Sena*, or N.W. extremity of the isle, a reef or tongue of sand extends nearly 3 miles N.N.W., or about two-thirds over the entrance, toward an islet called the *Gavia Grande*, which lies at the entrance of an opening near the North shore; so that the deep channel for ships is only 1 mile in breadth, and the course upward is between this isle and a group to the eastward, of which *Jaguono* is the chief. The best passage toward the eastern part of the gulf is made by keeping the main land on board, leaving the Jaguano group on the starboard side, and the two islands *Tacurucu* and *Madeira* on the larboard. There is anchorage at 1½ miles S.E. ½ S. from the *river Taguai* in 5 or 6 fathoms, muddy ground, with the Island Madeira W.N.W. ½ W., 2½ miles, Tacurucu, W.S.W. ½ W., and Mount Marambaya, S.W.

On sailing outward from this spot keep the main land on board, and pass between Tacurucu and Fortada, or the N.E. isle of the Jaguano group. You may freely stand toward the Gavia Grande, but must be cautious in advancing toward the bank of Marambaya, proceeding in not less than 9 or 10 fathoms, as the edge of that bank is very steep.

ISLE of JORGE, or GEORGI GREGO.—At about 2 miles from the South side of Ilha Grande is the islet of *Georgi Greyo*, which is bold-to; and, although sterile in appearance,

---

*As *Lagé* means a flagstone, and is a generic name given by the Portuguese to flat rocks but little above the surface of the water, we presume that the 18 feet on this rock, as denoted in a late chart, must signify 18 feet high *above* the level of the sea.

it affords not only anchorage on its North side for large ships, but plenty of wood and water; and here, at a village named *Angra dos Reis*, refreshments may be obtained.

GAIROSU BAY.—The entrance to this place, between the Ilha Grande and Punta Joatinga, may be readily known by a remarkable inland hill to the northward, called the *Friar's Hood:* bring this hill to bear N. by E. ½ E., and steer toward it, until you are 2½ miles within the point of the island, when you may bring up and anchor. By keeping within this distance from the island on the East you will avoid a sunken rock which lies nearly in the middle of the entrance. On coming in, numerous isles, inclosed within the bay, will be seen: and between those on the East is a passage into the Gulf of Marambaya. The principal village, *Villa Grande*, is on the N.E. shore. The situation of an islet near Point Joatinga, on the West side of the entrance, is lat. 23° 18′ 30″, lon. 44° 30′ 10″.

The Point of Joatinga and that of *Cairoçu*, which follows, at 5 miles more to the S.S.W., are high and steep, and may, therefore, be approached with safety. The points terminate the South part of the high lands which encompass the great bay of Ilha Grande, &c.

The PORCOS, &c.—At 25 miles S.W. by W. ¼ W. from Point Cairoçu is a group called the *Porcos*, or *Hog's Isles*, which comprehends one isle of moderate height, with three small islets, one on the South, the others to the N.E. Between the larger isle and the continent is a very fine channel, into which large vessels may enter and pass with perfect safety, but they should not venture in with a shifting wind. On several points of the coast within, cattle and refreshments, with wood and water, may be obtained. One of the best roadsteads hereabout is in a cove of Porcos, with 8 and 9 fathoms of water, sheltered from all winds, excepting those from N.E. to E. by N., which seldom continue so long as to cause a heavy sea. Here the tide is scarcely perceptible. Opposite to the Ilha de Porcos is the *Bahia de Tubaroes*, or Shark's Road, which has likewise good and clean ground, and is capable of admitting ships of burthen, but it is exposed to winds from the southward, which raise a heavy tumbling sea, dangerous to large vessels.

ST. SEBASTIAN, &c.—The N.E. point of the Island of *San Sebastiaõ*, or of *St. Sebastian*, is 13 miles S.W. by S. from Porcos; and there lie in the offing a group of three islets, called the *Busios*, and an island, *Vittoria*, nearer to St. Sebastian. The Busios lie at 11 miles S. by E. from Porcos, and at 6 miles W. 31° S. from these is the Isle Vittoria. The passage is clear for vessels of all dimensions between these several groups, and so is all the basin formed between the Island of St. Sebastian and the continent, with the exception that the channel between St. Sebastian and Vittoria is contracted by a reef extending 2 miles S.S.W. from the latter, and, therefore, vessels of more than a middling draught should not attempt it.

The Island of St. Sebastian, in its greatest extent, is about 4½ leagues in length, and its mountains are as elevated as those of the continent, from which it is separated by a gullet or strait. In clear weather this island may be seen at a distance of 15 leagues. Its shores are very steep; that of the South trends to the W.N.W. from the S.E. point of the isle. The eastern coast is altogether nearly in the direction of the meridian, and the isle is in form quadrilateral. The western coast, opposite to the continent, forms, with the latter, the gullet, and several deep bays, wherein there are excellent anchorages, bottom of oaze or mud, and depths of 7 to 22 fathoms.*

Those who are bound to St. Sebastian have seldom occasion to land, at any time, either on the North or the South side of the island. What has been already said on the winds and currents off the coast, has shown what precautions are requisite on approaching. There are impediments which may not be expected; and the Baron Roussin has shown that even in the month of June, which is the middle of what is called the southern Monsoon, having made the island from the South, he lost three days in tacking, in order to gain its North side; the winds being adverse and very fresh from the N.E., while the current was running to the South, at the rate of seven-tenths of a mile in the hour. The most prudent way seems, therefore, to be, not to attempt the approach from the southward, unless the weather proves fair, when the land may be seen and known.

Point Pirasonungo, the S.E. point of the island, is situate in lat. 20° 57′ 32″, and lon. [*corrected*] 45° 11′ 40″.

---

* In noticing this quality of ground, we may here observe that, on the coast of Brasil, the *bottom of oaze or soft* mud is almost always found near the high lands.—*Roussin.*

The gullet or strait of St. Sebastian affords shelter and refreshments for the largest vessels. All should enter it from the northward, and keep near the island. Its general direction, halfway down, is S.S.W. ½ W., and thence more westerly. It is contracted by a bank extending from the continental coast on the West, for more than two-thirds of its length from North to South. A particular plan of it is given on the chart, on reference to which it will be seen that, in the roadsteads on the island side, the depths are from 15 to 18, and that the depths in the channel vary from 10 to 20 fathoms; the bottom of muddy and tenacious ground. The greatest breadth of the strait is at the North part, 3 miles; but two-thirds of this space is occupied by the bank on the West, over which the depths are from 5 feet to 3 fathoms.

A roadstead more tranquil than that of St. Sebastian cannot be required; it being so protected by the surrounding high lands that vessels lie in water as smooth as in a basin.

At this island cattle, poultry, arrack, and the other provisions of tropical climates, may be readily obtained at a moderate price, either at the two principal establishments, or at the habitations of the country people, which are numerous, both on the island and the main. The fishery here is rarely productive, but the fish are of good quality.

The ancient town of St. Sebastian is on the continent, at the narrowest part of the strait. Since 1817 the Brasilians have projected a new town on the isle, toward the northern entrance, *Villa Bella de Princeza.* At 400 fathoms to the S.W. of this town is the best anchorage for ships of war, where there are 16 fathoms of water, bottom of gray sand.

There are several *watering places* at St. Sebastian, but the best is between the new town and the *armaçaõ*, or oil factory, situate near the N.W. point. The water is good, and easily obtained. On all the coast of the continent opposite firewood is abundant.

The *winds* at St. Sebastian almost always follow the direction of the gullet, night excepted, when the land breezes come alternately from different points, without any certain law. During the day the winds come mostly from the N.N.E. and S.S.W., following the line of the coasts; they are frequently interrupted by intervals of calm.

The *currents* follow the same direction as the winds, and their velocity is proportioned to the force of the latter. The most ordinary rate in the gullet is seven-tenths of a mile in the hour, and of one and eight-tenths when augmented to their greatest strength.

The roadstead is situate in lat. 23° 47′ 26″, lon. 45° 18′ 30″.

It has been noticed that the lands of St. Sebastian, with those of the vicinity, are very high; but they are well covered with wood to their summits, and present an agreeable aspect. The shores are steep, and you may anchor at a short distance from them on good ground. In general there are no dangers but what may be seen.

The South entrance of the gullet is not above a mile wide, but it will admit ships of war, and afford shelter during a S.E. gale. On a survey of the strait by Mr. Warner, there appeared to be little or no regular set or rise and fall of the tide here; but the current with northerly winds sets to the southward, and with southerly winds to the northwards, as already described. There may, however, be a rise of 2 or 3 feet on the days of full and change, on which the time of high water has been estimated at 11^h.

ST. SEBASTIAN to SANTOS.—From the S.W. end of St. Sebastian an islet, *Moela*, near the entrance of the port of Santos, bears W. by S. 15½ leagues. In the great bay between, at 5 miles from shore, lies a high conical islet, woody to the summit, called *Montaõ de Trigo*, or the *Corn Stack*, in lat. 23° 51′ 4″, lon. 45° 43′ 10″. At 2 or 3 miles around it, and to the same distance from the coast in the vicinity, is an excellent muddy bottom, having over it from 11 to 22 fathoms of water.

The group called the *Alcatrasses*, or *Cormorant Isles*, lies at 16 miles S.S.E. [*S.* 17° *E.*] from the Monton de Trigo. This group is composed of several arid rocks, the largest of which may be seen at the distance of 7 leagues; it appears from the E.S.E. in the form under which painters represent a dolphin, whereof the head, connected with two small rocks, turns to W.S.W. Another rock, larger than the two last, lies at 2 miles to the W.N.W., and two or three others lie nearly at the same distance to the N.E. The pilots say that the bottom near these rocks is not clear, and that it is imprudent to approach them within 4 or 5 miles, unless the wind be fair. This precaution is the more requisite, as the currents from the gullet and eastern side of St. Sebastian at times affect the sea hereabout. The assigned position of the principal isle of the Alcatrasses is lat. 24° 6′ 5″, lon. 45° 38′. From the north-easternmost of these islets the *Point* Seputuba, or S.W.

point of St. Sebastian's, bears N.E. ¼ E. 15 miles; and the entrance of the Port of Santos nearly West, 13 leagues.

SANTOS.—As a particular plan of this harbour is given on the chart of the coast, a prolix description is unnecessary. On reference it will be seen that the outer part is a circuitous bay, with a sandy beach, affording anchorage and shelter, perfectly clear and safe. The port, formerly much used by the Portuguese fleets, has sunk into comparative insignificance, together with the other southern ports, since the rise of Rio Janeiro, Bahia, and Pernambuco. The harbour is formed on the East by the island of St. Amaro, a portion of land separated from the continent by a small river, the *Bertioga*, which falls into the sea in that direction, in the parallel of 23° 54′ S. Through this river craft may still pass into the harbour of Santos.

The southern or chief entrance to the port of Santos admits large vessels, which may enter and be sheltered from all winds excepting those from S.S.W. to S.E. *Point Taypu*, on its western side, lies in lat. 24° 1′ 11″, lon. 46° 21′ 43″. The opposite point, *Manduba*, lies nearly on the same parallel, at a mile to the N.W. of an islet named *Moela*, or the *Gizzard*, which may be approached with safety.* On advancing into the bay, from the southward, you will have 10, 9, 8, and 7 fathoms of water, until near the bar, upon which there are only 4½ and 5 fathoms. The passage within is narrow, but the eastern side is the boldest, having deep water close to the shore. At 6 miles up the river, on the eastern shore, and above the second bar, is a fort upon a perpendicular rock, near which is a depth of 18 fathoms. Having arrived to this place you will see the town of Santos to the West, on steering toward which, at 2 or 3 cables' length from shore, you will avoid the bank stretching from the North side; and when nearly up to the town you may anchor. The best spot is abreast of the town, in 7 fathoms, bottom of mud. Provisions are abundant here, and good water may be obtained by sending a boat about 7 miles thence up the river.

To the south-westward, between the port of Santos and the village of Conceiçaõ, a distance of 9 leagues, the shore is generally low; but a chain of high mountains extends within, which branch in different directions, and appear in the distant offing like islands. The chain is broken by the harbour of Santos, but continues to extend thence eastward to the gullet or strait of St. Sebastian.

Lagé or Rock of Conceiçaõ.—At 7 miles E. 25° S. [*E.* 31° *S.*] from the village of Conceiçaõ stands an insulated rock, about 12 feet high above the sea, which appears to be a little larger than a man of war's launch, and at a little distance from it are 12 fathoms of water, bottom of soft sand. From this place the port of Santos may be distinctly seen, at 7 leagues to the N.E.

The Lagé or Rock of Santos, otherwise called *Bird Isle*, is a block of smooth stone, about 6 feet above the sea. It lies in the lat. of 21° 18′, at 16½ miles S. 20° E. from the islet Moela: between it and the port of Santos the depths are 15 to 18 fathoms, bottom of sand and mud, the usual quality of ground hereabout.

Redonda or Little Queimada.—This is a small, round islet, thickly wooded, and visible 20 miles off. It lies at the distance of 10 miles S. 30° W. from the Lagé of Conceiçaõ, in lat. 24° 21′ 26″, lon. 46° 46′.

The Queimada Grande is a large rock, nearly barren, lying at about 10 miles to the S.E. from Redonda, in lat. 24° 28′ 21″. This islet has appeared in some charts under the name of Ilha Redonda, but this appears to be wrong; as it is described as long and narrow, extending about N.N.E. and S.S.W. nearly 2 miles, with a reef from its northern point. Its highest part, appearing of a round form, is to the S.W.†

VII.—SANTOS TO THE RIO DE LA PLATA, INCLUSIVE.

Having described the Islets in the offing of Santos, we now proceed with the coast from Conceiçaõ southward.

---

* A light is said to be kept by night on this islet. Particulars to us unknown.

† A ROCK, stated to lie in 25° 41′ 20″ S., and about 44° 50′ W. [*corrected*], was discovered on the 13th of February, 1811, by *Medeiros*, a pilot of Bahia, who was for about a year along with Captain Roussin, and in whom Captain R. considered all confidence might safely be placed. It is marked *doubtful* on the chart; but, if it exists, it lies about *S.* by *E.*, *true*, 35 *leagues from the S.E.* end of St. Sebastian's.

Conceiçaõ is situate on a hillock near the shore, and at 4 miles from it there is anchoring ground with 9 to 11 fathoms of water.

The coast hence, a low, sandy shore, trends to the S.W., 14 miles, to the creek, heights, and beach of *Piruibe;* thence follow in succession the islets and point of *Guaraha*, the little river *Una*, *Point Jurea*, the *river Iguape*, the entrance of the *Mar Pequeno de Iguape*, and the port of *Cananea*. The soundings along shore generally increase in depth according to the height of the lands; and there may be found, at from 3 to 10 miles off shore, 7 to 13 fathoms of water. You may anchor off any part of the shore, at 2 or 3 miles from the beach, on an excellent bottom, in from 5 to 9 fathoms; but, as there are no harbours for large vessels, there can be no motive for anchoring here, unless in a calm, when not exposed to danger.

The entrance of the little river *Iguape* lies in the lat. of 24° 35½′, and the bar of the *Mar Pequeno* is about 3½ leagues to the S.W. of it, in lat. 24° 43′. By the *Mar Pequeno*, or *Little Sea*, is meant a natural canal, which extends in a parallel direction with the shore to the port of *Cananea;* and the beachy coast between is, therefore, that of an island; this is called the Praya, or Beach of Iguape. In proceeding along it a vessel should not advance nearer than 2 leagues, nor into less than 9 to 11 fathoms of water, sandy bottom.

The Mar Pequeno de Iguape, above mentioned, has a sufficient depth for large vessels, but its bar will admit boats only. The town is situate on the western bank, at 4 miles above the entrance. The Praya is a low, sandy flat, the middle part excepted, and can be seen but a little way off. Its extent is 10 leagues, and it consists mostly of sandy downs, interspersed with brushwood.

Mount Cardoz is the highest mountain on this part of the coast. Notwithstanding the shortness of the distance and the height of the chain of mountains of which Mount Cardoz constitutes a part, and predominates so remarkably, the fogs that prevail on this part of the coast, in the southern monsoon, obscure the land, and the coast should then be approached with great caution.

CANANEA.—An islet, BOM ABRIGO, in lat. 25° 6′ 49′, and lon. 47° 49′, distinguishes the entrance of the port of Cananea. It is very high, covered with trees, and vessels may anchor at a little distance from it to the eastward; a smaller islet lies on the South side of it, 2 miles to the eastward of which are 10 and 11 fathoms of water, over a bottom of sand. The common channel into the harbour is to the northward of Bom Abrigo, although obstructed by several shoals, but the southern channel is the deepest; and a vessel may venture into either with the assistance of a pilot. The bar may be found by means of Mount Cardoz, situate inland about 5 leagues to the W.N.W., and by the Praya de Iguape, which we have described. Within the harbour the Brasilians construct large vessels. The town is situate on the western side of the river, at 7 miles above the Ilha do Abrigo.

On proceeding southward from Bom Abrigo you will see, at the distance of 10 miles from that isle, an islet, *Castillo*, 32 feet high above the water, and nearly opposite to the mouth of a rivulet, *Arrapira*, no longer navigable. At 8¾ miles beyond this, in the same direction, is another, *Figueira*, 160 feet high; both have obtained their names from their peculiar appearance; the first being less elevated than the latter, but seeming broader, with a ridge rising up in the middle, and at a distance resembling a castle. Figueira in shape resembles a fig; both are nearly barren, and bear from each other S. 28° W. and N. 28° E. (*by compass*). At the distance of a mile from each are from 13 to 9 fathoms, fine sandy ground.

PARANAGUA.—The *Isle do Mel*, or Honey Isle, marks the entrance of the gulf of Paranagua, which is surrounded by forests. This gulf, improperly called bay, is a break of the land in all directions, within a circuit of 5 leagues, and is the receptacle of waters from several brooks and rivulets. The entrance is sheltered and divided into two passages, by the isle above mentioned; this isle is low, and has several hummocks on it, which at some distance resemble islets. To the northward of it are three islets, named the *Palmas*. The southern passage, obstructed by breakers, is not navigable; the northern admits brigs, many of which are built in the gulf or basin. In entering by the northern passage you leave the Palmas on the starboard side; these may be known by the palm trees, with which they are covered; but here a pilot for the interior navigation is indispensable.

The water which issues from the gulf of Paranagua carries into the offing the alluvion

"The ebb and flood are here very unsettled, and depend entirely on the wind. The flood sets in from the North, the ebb from the South; and, as the wind is almost always from the sea, the ebb, with a fresh northerly wind, is scarcely apparent, and seldom lasts more than two or three hours. The water continues sometimes at its height for three or four hours together, during which no change whatever was perceptible, either in its increase or decrease. The lowest tide we had was on the 27th of January, 1804, one day after the full moon, with a fresh North wind; and the highest tide, which rose 3 feet, was two days after the full moon, with a very moderate N.E. wind. A southerly wind kept the water up above an hour.

"The variation of the needle, which Frezier, in 1712, found to be 10° E., we found by a mean of two compasses, 7° 50′ E."*

The description of La Pérouse accords well with that of Admiral Krusenstern, and so does that of Captain Lisiansky. M. Pérouse, who visited the harbour in November, 1785, says, "The approach of ships to St. Catharine's is very easy. At 18 leagues in the offing there are 66 fathoms of water, over a bottom of soft mud, gradually shoaling till within 4 cables' length of the shore, where there are still 4 fathoms of water."

The Baron Roussin says, that the island of St. Catharine is sufficiently elevated to be seen in clear weather at the distance of 15 leagues. At this distance is found 62 fathoms of water, and this depth diminishes to 4 cables from the coast, where there are only 4 fathoms.

On approaching from the East, the island appears in very irregular heights, being intersected by mountains separated by deep valleys; the greatest elevation is from North to South, and the mountains of the continent beyond it are a little more elevated than that of the island. You will particularly distinguish among them the *Morro de Camborella*, a branch of the eastern *Cordilheiras*, extending from St. Catharine's to Rio Janeiro.

About the middle of the isle, near the sea, is a large lagoon, under the high lands, which presents an apparent opening that may serve as a landfall. When at 3 leagues from the eastern coast you bring this opening to the West, the N.E. point of the isle will bear about N.W. at 3 leagues.

All the exterior coast is clean and moderately steep, and you may range along it without danger, passing several large rocks which lie off it, as hereafter described.

The island may be navigated all round, and it presents numerous anchorages between its western coast and the continent, but the North part of the intervening channel is the part most fit for vessels drawing much water, and it is, therefore, that generally used. This passage is rather less than 2 leagues broad, is clear of danger, and on coming in you may advance to either side, only observing to keep clear of the *Northern Molrques*, large rocks which lie to the S.E. of Point Rapa, the North point of the island. This channel hence is clear, and you may beat up to either shore without risk, in from 40 to 28 feet of water.

Having advanced within the strait you may anchor in any part according to the vessel's draught, and in keeping near mid-channel the depth will be sufficient for large ships when at 1,000 toises (1,065 fathoms) S. by E. from the little isle Anhatomirim, on which the fort of Santa Cruz is built. Passing this point, on advancing to the south-westward, the depth gradually decreases to 15 and 12 feet; and to the southward of the Raton Islets, lying on the eastern side, there is not more than 10 or 12 feet of water. In the large bay to the West, called the *Sacco Grande*, the depths are still less; this bay is a tranquil place, frequented mostly by vessels employed in the whale fishery off the coast, and is well adapted for small vessels.

The bottom is of mud, in almost all the anchorages of the gullet. From that which vessels of war mostly frequent, the following are the bearings by compass.

Point Rapa, the North point of St. Catharine's, N. 62¾ E.; middle of the fort Santa Cruz, N. 56½ E.; Fort of St. José, near the N.W. point of St. Catharine's, N. 62½ E.; and Point of the Armaçaõ on the continent, N. 9° 50′ E., allowing a variation of 7° E. The depth is about 5¾ fathoms, and the bottom greenish mud, good holding ground. This place is generally smooth, being sheltered by the high lands around. The only open direction is N.W., but the winds from this direction are seldom strong.

---

* From the survey of the Isle and Strait of St. Catharine, made by Captain Barral of the French navy, in 1831, it appears that the rise of tide is from 4 to 6 feet. High water at 2^h 15′.

There are several good watering places hereabout; the best is at 2 miles to the North of the isle Anhatomirim, on the continent, where plenty of excellent water may be obtained without expense, either by day or night, and permission may be obtained for cutting firewood, either on the continent or on one of the Raton Isles. You may also, at a moderate price, obtain building wood for repairs, should it be required. In short, the principal town of the island, and the habitations near the anchorage, supply, on reasonable terms, all the necessaries and refreshments produced in the country. These consist in cattle, pigs, fowls, rice, maize, arrack, farina of manioc, dried meat, sugar, coffee, tropical fruits, &c. The Isle of St. Catharine is, therefore, one of the best *relaches* or stopping places for refreshments for vessels engaged on long voyages, or requiring the same on a return.

The roadsteads of the island almost always abound in fish; but the success of the fishery depends on causes but little known; and all the seasons of the year, any more than all the hours of the day, are not equally favourable. La Pérouse found the fish abundant in the month of November, but Roussin was less fortunate in the same month, and in those of May and August. Most part of the beaches are besides strewed with the bones of whales, which are difficult to avoid when hauling the seine.

When you obtain wood from this country, and from the coasts of Brasil generally, it is best to prefer the young trees; the old trunks, commonly hollow, being mostly filled with insects and eggs of venomous reptiles, which might be injurious on board. It will be prudent to immerse the wood in the sea before hoisting it on the deck.

The most common winds in the gullet follow the direction of the strait, either in one way or the other, but they are seldom violent, and the storms are not dangerous to vessels which are well moored. From March to September, which is the season here called the winter or southern monsoon, the winds in the vicinity of the isle blow generally from the South to S.W.; sometimes very strong, and accompanied with rain; but these violent crises do not exceed more than 48 hours.

Toward the month of October the winds approach the East and the North; the six following months constitute the summer, and are the hottest of the year. There are then frequent storms, which come from the North to the S.E. by the West; and when, in this season, the winds descend from the S.E., they are accompanied with considerable rain; but, in general, the greatest quantity of rain falls during the months of August and September; but even at this period some years have been exempted.

The tides are regular in the gullet, but it has been remarked that, as they enter by the North and South at the same time, meeting in the roadstead near the town, they return in a similar way, with greater or less velocity as they may be accelerated or retarded by the prevailing wind. The mean velocity of the current rarely exceeds three-tenths of a mile in the hour at half tide, and the difference of level in ordinary tides is not more than 3 feet. In the syzyges, however, the current frequently runs at the rate of a mile and a half, and then the water rises and falls 5 or 6 feet. Time of high water, on the full and change, 2^h 40′.

Should circumstances require you to seek the protection of the forts, this anchorage will not answer your purpose, and you must seek for that advantage either under the fort of Santa Cruz, on the Isle of Anhatomirim, that of St. José, on the Isle of St. Catharine, or the Fort Raton, on the largest of the two islets of that name; but the shot of these fortifications does not cross effectually from either point, at least with the artillery with which they are at present armed.

The governor of the province resides in the town of Nossa Senhora do Desterro, which is situate at about 10 miles S. by E. from the islet Anhatomirim, on the narrow of the strait, about halfway down the island. This place, which is well sheltered, may be reached at all times by small vessels, and the communications between all the points are quickly made. At the anchorage, half a mile before the town, the depth at low water is 20 feet.

The approach to St. Catharine's may be made indifferently on the parallels between 27° 30′ and 28°. The winds and currents in the offing are not such as to cause much error in the route; but at all times you should prefer making the southern part of the isle in the southern monsoon, and that of the North on the contrary.

The southern part of St. Catharine's and the coast to the southward were not surveyed by Captain Roussin, and, in consequence, M. Barral, commander of the gabare or surveying vessel, *L'Emulation*, was charged with continuing the work, and surveying the Rio Plata. This mission was commenced in March, 1830, and ended in 1832; its result was two general charts, a number of particular plans, which have been finely engraved and since published, with a brief description, to which we owe the following particulars.

The description of St. Catharine's agrees with that of the Baron Roussin. The lands of the island and of the adjacent continent to Cape Santa Marta Grande are very high and woody. The highest mountains which are seen beyond the island are in the chain of *Cubatao;* they are covered with clouds during the prevalence of southerly winds, but are clear with winds from the N.E. In the offing, at 12 leagues from the island, there are soundings of 62 to 72 fathoms, with a muddy bottom. On approaching, the depth gradually decreases. At a distance of 3 leagues are 33 to 35 fathoms, and 18 to 28 at 4 miles.

The *Isle Arvoredo*, at the northern entrance, which is high, has two sugarloaf summits, which are first seen on approaching. The islet Badejo, 8 miles to the southward of Arvoredo, is destitute of vegetation.

A vessel drawing not more than 14 feet of water, and entering by the North passage for the town N. S. do Desterro, having passed the North end of the island, should be guided by the following indications.

Steer for the Cape Quebra Cabaço, on the continent, leaving the two islets Ratones on the larboard side, at 1½ miles or less. The coast toward the island of Anhatomirim will be about S.W. by W., and thence S.W. by S.

When you bring the little or southern Raton to bear E. ¼ N. [*East*] at 2 miles off, change the course to S.E., and continue it thus for 3 miles, passing a rocky flat, *Ipatitinga do Norte*, off Cape Quebra Cabaço, on the starboard side. On these rocks are only 4 or 5 feet at low water. When you have brought the cape to the South of these rocks, bearing W.N.W., the route is to the S.W., until you bring the rocks N.N.W. ½ W.

You then steer to the south-westward about half a league, so as to pass at 4 or 5 cables to the eastward of a rock near *Cape Henriques*, which, being a woody cape, is thus distinguished from Quebra Cabaço; next proceed south-eastward, toward the narrow part of the strait, leaving the islet and point *do Lial*, on the western side, at the distance of 3 or 4 cables. Steering hence S. by E. you enter the Little Strait or Narrows, which is commanded on the left by *Fort Santa Anna*, and on the right by the battery of *San Joaõ*. Here you will find from 11 to 16 fathoms of water, and will perceive, in advancing, the islets *Gato* and *Das Vinhas*, at the extremities of the cove on which the town is built. You leave the first on the left, and may then cast anchor in 20 to 21 feet of water, with the islet Gato bearing N.N.E., Das Vinhas S.S.E., and the steeples of the cathedral N.E.

The city of N. S. do Desterro is situate in lat. 27° 35′ 25″, lon. [*corrected*] 48° 29′ 16″.

At times, on coming from the northward to the town, there are found spots of only 7 feet of water, but the oaze has 5 feet of depth at least and the vessel will not be injured. With high water the *Emulation*, which drew 14 feet, came up to the town in three days. When the water was low, and the stream weak, she anchored.

EASTERN COAST of ST. CATHARINE'S.—All the eastern coast is clean, but off the points, at some distance, are several rocks and islets above water; these are, the Northern Moleques, the islet Badejo, before mentioned, the two Aranhas, the Isle Xavier, Ilha do Campexe, the Southern Moleques,* the Tres Irmaös, or Three Brothers, the Papagaios Isles, the Fort Isle, at the entrance of the southern passage, and the Isle dos Cardos, within the same.

The *Emulation* proceeded along the coast at the distance of 3 or 4 miles, and passed between the Irmaös and the Southern Moleques in 15 fathoms of water. The only obstructions are the islets and rocks above mentioned, which may be seen at 3 leagues off, and about which there are 13 fathoms. At the Isle do Campexe you may find anchorage, sheltered from southerly winds.

The SOUTHERN PASSAGE.—The southern entrance into the strait or gullet of St.

---

* The *Isle Xavier* is of moderate elevation and flat on the summit. The *Southern Moleques* are three great whitish rocks, touching each other, and forming what is otherwise called the *Grande Moleque*.

Catharine's lies between the S.W. extremity of the island, *Point dos Naufragados*, and the Fort Isle, a very narrow passage, but in which there are 17 fathoms of water.

When you enter from the southward you should have a leading wind, rising tide, and fair weather, without which the current may carry you on the Fort Isle, or on the opposite point, which are less than 300 fathoms apart. The vessel should not draw more than 15 feet. On coming from the southward you steer toward the Fort Isle, and, when you have the Papagaios on your left, you will see the Irmaòs to the right. On passing hence, north-westward, the pass between the Fort Isle and Point Naufragados will be open. Having passed through, on a West course, you change the course to North, and pass the islet *Cardos*, which is remarkable for an insulated tree which stands on its summit.

You pass to the eastward of Cardos at the distance of 1 or 2 cables, and then proceed north-westward toward the *Enceado do Brito*, to the distance of half a mile; and thence North, along the western shore to the point of *Pesqueiro Fondo*, at the distance of 4 cables. Thus you will leave, on the western side, the village of *Enceado do Brito;* and farther on a cluster of houses and cottages, forming the little hamlet of Cedros. On your right, at a distance, you may see the village of *Riberaõ* or *San Lapa*, on the Island of St. Catharine, and nearly before you will be an islet, the *Ilha do Largo.*

Before arriving at the last you will have passed a flat of dangerous rocks, beyond which you will be when the steeples of the cathedral appear on the western part of the islet Largo, and the West point of Cardos is on the fort of the South bar.

From off the Isle do Largo continue your course N. ½ W. until an islet, *des Cascas*, bears West; thence proceed toward the steeples of the city up to the anchorage between the islets do Gato and das Vinhas, which have been described.

THE COAST SOUTHWARD OF ST. CATHARINE'S.

Under Point Pinheira, which lies at the distance of 2½ miles from the South end of St. Catharine's, is a good anchorage, sheltered from southerly winds. At 2¼ miles from the outer extremity of this point is an islet, the *Ilha do Coral*, extending North and South; and when seen in this direction it appears of a round form. It is covered with trees, is about three-quarters of a mile in length, and is a useful mark for vessels bound in by the southern passage. Its situation is lat. 27° 55′ 10″, lon. 48° 29′ 10″. Between this islet and the Cape Sta. Marta Grande, in lat. 28° 39′, are other islets, which lie off shore as follow.

The Ilha das Araras, to the S.E. of Point Bituba, lat. 28° 18′ 0″, lon. 48° 31′ 32″.

The Islet Tocoromi, a high and steep rock, to the S.E. of the Ilha Arara, lat. 28° 19′ 29″, lon. 48° 30′ 30″.

The Isle dos Lobos de la Laguna, to the S.E. of the Araras and Tocoromi, lat. 28° 24′ 36″, lon. 48° 40″.

At Point Bituba begins the beach, within which is a lake and the towns of *Villa Nova, Santa Anna*, and *la Laguna.* The last has some trade with Rio Janeiro, and is situate at the South part of the lake, at a mile to the N.W. of the bar, in lat. 28° 28′ 33″, and lon. 48° 45′ 24″. At la Laguna is anchorage, practicable only for small vessels drawing under 7 or 8 feet of water, as there is a bar at the entrance.

The Cape Santa Marta Grande is the final termination of the line of mountains extending within shore to the northward, and is remarkable by having on its summit several great white rocks, which from a distance appear like an assemblage of houses. The variation of the compass here, in November, 1831, was 7° 20′ E.

Between Cape Santa Marta Grande and the bar of the Rio Grande de San Pedro, an extent of about 95 leagues, the coast is extremely low, and variegated only by sandhills and stunted bushes. It can hardly be seen, in clear weather, from the mast-head, at the distance of 7 or 8 miles, and from the deck at not more than 3 miles; the first part, from the North, trends nearly S.W. This part is called the Praya, or Beach of *Torres;* it begins in lon. 48° 44′ 56″, and ends in 49° 55′ 52″. The second part trends N. by E. and S. by W., and is called the *Praya*, or *Beach of Fernambuco.* Its eastern part begins with the termination of the former, in lat. 29° 52′, and it extends to lon. 54° 34′ 52″. The third part trends nearly S.W., and is known under the name of the *Praya do Destreito*, from lat. 31° 12′ to the mouth of the Rio Grande de San Pedro.

When to the southward of Cape Santa Marta Grande, you may see, in running along, a chain of mountains extending westward about 15 leagues from the sea into the interior country, and disappearing at *Torres*, which stands 25 leagues from the cape in lat. 29° 28′. The beach here may be approached to the distance of 3 or 4 miles, and was coasted at this distance by the *Emulation*; but there were no marks on shore fit for triangulation, and the situation of the vessel was ascertained by frequent observation, and estimated distance from shore.

Twenty-seven fathoms of water, bottom of sand, mud, and shells, were found at 4 *miles* to the South of Cape Santa Marta Grande, and beyond that, in going to Torres, the water diminished to 4½ fathoms near the shore. We may judge of the decrease of bottom in remarking that from the 27 fathoms to the 4½ there is a distance of 25 leagues.

The *Praya do Fernambuco*, between the parallels of 30° and 31°, is more steep than that of Torres. The *Emulation* found 35 fathoms of water, bottom of mud and sand, at 4 or 5 miles from the shore. On sailing out in the offing, to the distance of 15 leagues, the depths of water increase progressively to 85 fathoms, soft sand. Passing this limit there was no bottom at 100 brasses or 91 fathoms. At 10 leagues out the depth is about 74 fathoms.

The *Praya do Destreito* terminates at the Rio Grande de San Pedro, as before mentioned. From 9 to 13 fathoms were found in coasting along it, at 3 or 4 miles. At this distance the *Emulation* ran 17 leagues, over a bottom of sand. The shore is not higher than that of Fernambuco, but there are some sandhills more elevated, and there is more vegetation.

In the offing, at 20 or 24 leagues S.E. from this beach, are 34 and 35 fathoms of water, bottom of mud and sand, and on approaching land the depths gradually diminish.

We may remark that the beach of Fernambuco, the central beach of the three, has most water near the shore and in the offing; while, on the contrary, that of Destreito is that which has the least.

RIO GRANDE.—The district of the Rio Grande de San Pedro is of great importance to the northern parts of Brasil; its port being the channel of communication with a rich interior, which supplies pulse, grain, and other productions. It includes the whole of the great lake called the *Lagoa dos Patos*, and of the rivers which fall into it, from the North and West. The bar is represented in lat. 32° 9′, and lon. 52° 4′. The entrance is shoal and difficult, and the bar frequently shifts; but, after passing the latter, you enter into the *Lake*, and may then take a berth, or navigate as convenient.

The climate is so fine and the land so productive, that the country has been styled the granary of Brasil. Wheat is exported hence to all the northern provinces. The population, taken within the circuit of 60 miles, has been computed at 100,000. The occupations of the inhabitants, an athletic and robust people, are mostly the rearing of cattle, drying and preparing hides, salting and drying beef, collecting tallow, horns, and horsehair. These staple commodities and productions give employment to more than 100 sail of coasters, some of which make two or three voyages in the year, importing rum, sugar, tobacco, cotton, rice, mandioc, sweetmeats, &c. Of European commodities they import wine, oil, olives, glass, iron, baize, coatings, stout woollen cloths, Manchester goods, printed cottons, calicoes, muslins, handkerchiefs; silk, cotton, and worsted hosiery; hats, flannels, &c.; sail cloth, cordage, anchors, tar, paints, fowling pieces, and ammunition of all sorts; hardware, particularly slaughtering knives; plated ware, and fancy articles. The greatest part of these are conveyed into the interior on the backs of horses; but as of late the markets have been over-stocked, the trade is much reduced.

The neighbourhood of the town is unpleasant; the high winds so shift the sands that they penetrate into the very houses. The cattle in the neighbourhood are very numerous, as well as in the interior districts; but it is singular that neither butter nor cheese is made, nor is milk at all times to be obtained; and, although excellent grapes are produced, no wine of the country is obtainable. Mr. Luccock, on proceeding to this place, in 1809, has said:—

"On approaching the coast of Rio Grande do Sul, we first made land in the neighbourhood of *Estreito*, about 9 leagues north-east of the bar of the river whence the province takes its name. Little round hillocks of sand, without the slighest degree of vegetation, seemed to rise out of the water, to which a splendid sun communicated a dazzling whiteness. Soon it appeared that these were only inequalities of a sandy shore, from the midst of which arose the church of Estreito, a small building in the usual style of such edifices in the villages of Brasil. A few trees and a scanty portion of verdure about it now becoming visible, served to increase the forbidding appearance of the surrounding desert. Long before we saw any marks, by which to guide our course, we were in shoal water, and encompassed with sandbanks.

"The captain, having stationed himself at the mast-head, saw these shoals and the channels between them more clearly than they could be discerned from the deck, and gave us directions how to steer. At length a boat came out to meet us, with a pilot on board, and, by appropriate signals, did us the same service. These signals not only point out the course which a vessel is to take, but sometimes direct her to anchor where she is, or even to proceed again to sea when there is not water enough on the bar to carry her safely over. The first of these directions is given by holding from the boat a small flag in the direction which the vessel ought to take; the two latter by lowering it altogether. The signals are explained hereafter.

"When we had reached the boat she did not put the pilot on board, but proceeded a little ahead, sounding with a long pole, which was dexterously turned over from end to end, as we proceeded across a broad and shallow bar, situated in a deep and dangerous bight. We entered the river between a bluff head to our left, and a long low sandy point to the East, through a passage about half a mile wide, guarded by a few miserable erections called forts and batteries. Just within the passage lie the vessels which have received their lading, and are ready to proceed on their voyages, waiting for a sufficient depth of water on the bar. Round the point presides the *piloto-mor*, who has the superintendence of the place, and to whom I am greatly obliged for many kind and gentlemanly attentions.

"The decline of day, and tediousness of our progress, rendered me impatient, and induced me to ascend the mast, hoping to look beyond the flat, dreary, desolate, and almost houseless waste, immediately before our eyes. From thence nothing was to be discovered, on the East, but loose and barren sand; westward appeared a tract of swamps, partially covered with brushwood; beyond, a broad line of water, the bay of Mangueira; and still farther the small white pretty looking town of *St. Pedro do Sul*, commonly called *Rio Grande*. The church, which the people dignify with the name of cathedral, rose in the centre of the buildings, and formed the chief feature of the view. Before us lay several vessels at anchor, and among them a fine schooner with the British flag flying, indications of commerce which cheered our spirits, and gave us a more pleasant evening than we had enjoyed for a long time.

"Customhouse officers were put on board at the batteries; and the next morning the vessel was brought up to her anchorage in a masterly style, close to the village of St. Pedro do Norte, and 3 miles from the principal town; the sandbanks not permitting a nearer approach. From the entrance of the river to the anchorage, through a course of 9 miles, the same obstructions prevail, leaving a narrow, intricate channel, with barely water sufficient for a deep laden brig. About 6 miles up, on the left hand, is a large bay, still called the bay of Mangueira, though little of that plant remains on the neighbouring swamps. In the bay fishes of various sorts so abound, that afterward crossing it at a late hour, great quantities threw themselves over our canoe in every direction, and some fell into it. A little higher up is another broad inlet, navigable for yachts of fifty tons, within which is the fertile island of *Marinheiros*, containing some of the highest land, and the best cultivated spots in the neighbourhood. The soil is a red clay, which shows that it was once attached to the continent, and is of older formation than the bay. It is celebrated for the production of onions, and of an article of higher value; from hence, or from the island of Sta. Maria, the town is supplied with almost the only drinkable water used within it. Beyond these islands the water expands to a breadth of more than 10 miles, but is so very shallow, that the practicable channel, which runs near the eastern shore, is in one part not more than 100 yards wide. Other islands, besides those which have been mentioned, are scattered about this expanse of water, and communicate to it some little ornament. The distance from the bar to the entrance of the Lagoa dos Patos is about 30 miles; the whole of which is, with some impropriety, called the Rio Grande, and considered as the harbour of St. Pedro. Through this long course the channel is hardly any more than 12 feet deep, and in some places reduced to 6 inches; so that 3 feet may perhaps be nearly the average depth of the river.

"The country, as we advanced toward St. Pedro, and even in the environs of that town, was not much better than that portion already described. When settled, my favourite morning walk was to a fort upon the summit of the loftiest hillock near the place, from which, small as the elevation really is, there is a spacious view of the river, and of a region wild and desolate in almost every quarter. To the North lies the fine island of Marinheiros; to the South a marshy track, partially covered with vegetation, the ground rising and becoming drier as it approaches the ocean; to the East, beyond the water, are loose sandhills, their height from 120 to 140 feet; the tops are usually round; toward the West the country is also sandy, gently undulated, and destitute of everything green. When the wind blows strongly from the S.E., as it often does, it brings with it so much sand, which whirls from the tops of the hills like smoke from a volcano, that the eyes can hardly venture to take that direction. Turning the back to the wind for relief, the sand is seen travelling onward like a vast fall of snow; a portion of which, impeded by the town, is piled against the houses, and sometimes mounts and crushes the roofs. The extent of this desert, however, is not great; it forms a slip along the edge of the ocean, not more than 15 miles broad at a medium, though it is 300 miles long; and here and there are scattered rich oases, the sites of pleasant farms. The sand evidently comes from the ocean, being first cast upon the coast, and then driven farther inland.

"The town of St. Pedro, situated in a level plain, not many inches above high water mark, contains about 500 dwellings; and the whole number of stationary inhabitants may perhaps be 2,000, two-thirds of which are supposed to be white, or very slightly tinged. But some of the houses, belonging to persons who reside on their estates, are seldom occupied, except at religious festivals. (According to Mr. Dillon, R.N., the number of inhabitants in 1849 was about 6,000.)

"There were here marks of vigour, precaution, and discipline, such as I had not before seen in this part of the country. On the northern side of the Plata, not a single sentinel made his appearance; and the soldiers were ill-clothed and worse accoutred. But at Rio Grande men under arms, properly furnished for their duty, were stationed at the government house, on the quay, and at all public offices.

"The neighbourhood of the town afforded a sphere for the consumption of some of its imports; more of them proceeded up the Lagoa dos Patos, to Porto Alegre, the chief town of the province, and the rivers that fall into it; up the Lake Mirim, and through the Ygaroon to the fine country lying at the back of Monte Video and Maldonado. From these extensive waters the exports are collected, consisting chiefly of hides, tallow, wheat, onions, cheese, and charqued or jerked beef; all these articles are sent to Rio Janeiro, only that Bahia shares with it the last mentioned. The vessels sailing from Rio Grande, in 1808, amounted to 150, half of them to Rio Janeiro; they were, in general, brigs from 100 to 200 tons burden, and completed their voyages in four or five months. The country produce is brought down in yachts of from 20 to 70 tons burthen. A few of the brigs load at Porto Alegre; the greater part at St. Pedro, whence all are obliged to take their clearance. The value of this trade to Brasil is incalculable, notwithstanding the injury which it receives from the government's draining the country of its cash, and furnishing nothing in return."

LIGHTHOUSE.—Before giving instructions for entering this port, which, from its shifting nature, cannot be implicitly followed, as will be seen by the following directions arranged in the order of time, it will be necessary to state that a new *iron lighthouse* has been constructed, and was first used on Jan. 1, 1852. It bears from the old one mentioned below, N. 23° W., by compass, 270 feet distant. One lighthouse cannot be well mistaken for the other, as the new one is 33 feet higher than the former one. It shows a REVOLVING LIGHT of the first order.

SAILING DIRECTIONS.—1st. *by Captain Wm. Grant*, in 1802. Finding yourself in lat. 31° 30′ S., and having N.E., E.N.E., or easterly winds (any other winds may be dangerous, that is from the sea), you may stand with security for the land [see the note on *Reid Shoal* below*], steering W.S.W., until you find yourself in soundings; and when you find yourself in 13 fathoms, you will see the land, if to the northward of the bar; but if you have passed it, you will not, as the bank to the southward stretches out to a greater distance; and you cannot see the land unless when you are in 8 fathoms, and then barely.

---

* In proceeding, as above, toward Rio Grande, caution is necessary, as it appears that a shoal lies in the track from the north-eastward, "REID SHOAL, BRASIL. The following has been communicated in a letter from Mr. Reid, of the brig Sweet Home, of Aberdeen, dated Rio Grande, March 14th, 1842. The vessel, on her voyage from Liverpool to that port, struck on a shoal, in lat. 31° 3′ S., and lon. 49° 47′ W., at least 40 (?) miles off the Brasilian coast. *Luckily there* was no sea on, and the wind was N.E. by E., which enabled her to clear the *shoal immediately*, making but little water. After his arrival at Rio Grande the master of

The land, about 31° 40′, you will know by seeing several tufts of trees pretty high and rounding to the northward; and, standing along shore, steering S.W., you will see sundry straggling tufts, but not so high. Here, if it be very clear weather, you may see houses, which will appear in the opening of the trees. You may then stand along shore with safety, keeping in from 10 to 9 or 8 fathoms. Losing sight of the trees and houses, you will see some mountains of sand, and an entire sandy beach; and, when you are within 2 leagues of the bar, you will see tufts of trees, and find the soundings decrease, with a bottom of mud and red shells. You must now keep in 8 fathoms, but not less, as the water sets right on shore when close to the beach. The lead must now be kept going until you find soft mud, when you will find yourself close to the bar, which may be known by seeing several stakes along the beach: you must then haul up and steer South, to keep clear of the bank. You may easily know the bank by the sea's breaking over it, particularly from the eastward.

2nd. Directions by *Captain James Harrison*, of the brig *General Wolfe*, which first appeared in the *Nautical Magazine*, October, 1836.

No vessel should attempt to enter if drawing more than 10½ or 11 feet of water, and she must have a leading wind in order to cross the bar.

"The land ought to be made to the N.E. of the bar, in about lat. 32° S. There is no difficulty in doing this, as the soundings are perfectly regular, about 60 fathoms at 60 miles' distance, and shoaling very gradually. When in 10 or 11 fathoms you will see the land. It is not advisable to get in-shore to the southward of the bar.

"The coast is little known; and I could never get any of the coasters or pilots to give me any information about the shoals said to exist thereabout. In general, but not always, the bottom is mud to the southward, and abreast of the bar, whilst it is usually sand to the northward; and, if to the southward of the port, the land will not be seen till you are in 7 or 8 fathoms. I do not know of any marks to tell how far you are from the port, as the whole shore consists of low sand-hills, interspersed with bushes, and these hills alter their shapes with every gale of wind. The town of *Estreito* lies about 30 miles N.E. of the bar, but you must be close in-shore to see it. This is the only object which breaks the sameness in the appearance of the coast for many miles. The latitude is the best guide.

"After making the land, run down at a convenient distance, till you see a square white tower, which stands at the entrance of the harbour, in lat. 32° 9′ S.* This is a very conspicuous object; makes like a sail at a distance, and may be seen some time before the land about it. On the top of this tower (which showed a bad light at night, described hereafter) a man is stationed, who, as soon as he perceives a vessel, hoists a red flag, when the pilot boat goes out to sound the bar. So soon as you see the tower distinctly, hoist the signal corresponding to your draught of water at the fore, as presently explained. When you get down to within 3 or 4 miles of the tower, haul in-shore into 4½ fathoms, if a commanding breeze, or you may bring the tower to bear W.N.W. ½ W., and steer for it; when you will soon see the boat at anchor on the bar, with the signal corresponding to the depth of water on the bar flying at her mast-head.

"Particular attention must now be paid to a man in this boat, who will wave a small red flag on the end of a long pole in the direction you are to steer. Thus, if he wants you to steer more in-shore, he will point toward the shore, and keep it pointed in that direction till your course is altered sufficiently, when he will lower it, and *vice versâ*. Luff to, or bear away immediately, according to the signals he makes. When you get near the boat, he will weigh his anchor, and proceed ahead of you. Follow in his wake, still paying attention to his signals, and you will soon pass a second boat at anchor; here the water deepens, but the channel is not a cable's length broad. After passing this boat you haul more up toward the guard schooner, and choose your anchorage anywhere to the

---

the Sweet Home ascertained that a Brasillian schooner had grounded on the same reef a short time before. The reef or shoal has not been laid down in any chart, and lies immediately in the track of vessels bound to that port."—*Shipping Gazette, July 1st*, 1843.

* M. Barral gives it as only 32° 7′ 20″.—Ed.

approach the bar to enter. If the flag on the tower is hauled down, vessels should lay off and on until it is again hoisted; and when they cannot get in, they should keep under sail, if the wind is from N. to N.E.

The winds that prevail generally after mid-day to dark are E.N.E. to E. from December to April; and, when not able to get in during these months, they can anchor in 7, 7½ fathoms water, bringing the tower to bear N.N.W.

If preferred to keep under weigh, ought not to approach the shore to less water than 7, 6½ fathoms, and to stand to sea as far as 14 fathoms water.

Vessels coming from the South should keep in 6 fathoms of water, until the tower bears N.; the wind being from W. to S.E., the course in is N. and S. with the tower.

If not able to enter, and wishing to anchor, it should be in 7 fathoms, the tower bearing North and South; this from May to November, when the prevailing winds are W. to S.E.

Vessels should not draw over 16 to 17 palms bound to this place, under 13 feet. The wind being from S.W. to S.E. is the highest water on the bar.

The preceding directions are good, so long as the bar remains to the southward, but it happens that every four or five years it changes, and will next be S.E. and E.S.E.

When the red flag is hoisted, it is a signal for vessels to approach the bar; if on the tower another flag is hoisted to the South, the vessel should sail farther South until it is hauled down; in like manner if a second is hoisted to the North, and a vessel is to the South, she should sail farther North. If no flag is hoisted on the tower, vessels will stand off and on, or anchor as already described.

Navigating during the night along the coast, the bottom, both to the North and South, is sand of different kinds, but muddy bottom is in front of the bar, and a vessel should keep within as short a distance as it is practicable.

N.B. The palm is about 9 English inches. The signals for vessels to hoist are the same as hitherto.

When crossing the bar vessels should follow the pilot boat, and luff or fall off in the direction the flag is pointed by the boat.

4th. Nautical remarks by Mr. Dillon, R.N., of H.M.S. *Raleigh*, in 1849. It is unnecessary for me to repeat the signals made use of at the bar for the guidance of vessels, as they remain unaltered; but I would caution masters of vessels of large draught not to approach the bar into less than 6 fathoms (even if the signal to close be flying), unless the bar boat is at anchor in the entrance, and there is a certainty of being able to get in, as the S.E. bank is very steep on the outer edge. Unless the weather is unusually fine, the sea breaks every now and then in 11 feet, and the deeper water is then plainly discernible. The best track in is close along the edge of the S.W. bank, which is the shoaler, and its edge shews more distinctly, as it is nearly always breaking. The tail of the S.E. bank projecting a little more to the south-westward rather overlaps it, making the course in, at first about N. by E. or N.N.E.

It is to be observed that the channel is by no means a distinct and clear one, as there are several knolls or ridges of sand, rising 1 or 2 feet above the general surface of the ground; which it is almost impossible to avoid in so small a space, even supposing them to be stationary, which I think improbable. I fancy that every gale must make some change.

From all the information that could be gathered from persons acquainted with the port, it would appear that the channel is not nearly so deep or clear as it has been. I sounded at the time of some of the highest tides during the *Lizard's* stay, and 14 feet was the greatest depth, there being at the same time a swell, for which it would have been necessary to allow 1½ to 2 feet.

The bar is composed of very fine sand, which lies extremely compact and hard; from the passage the lighthouse bears N. by W. 3½ miles distant. The bar boat is sometimes anchored on the tail of the S.E. bank, but more frequently a little inside of it, and on the approach of a vessel a flag is waved from the boat in the direction the pilot wishes the vessel to take; he having previous to anchoring sounded with a pole, and ascertained where is the deepest water.

During great part of the time the *Lizard* was lying at the bar, the weather was unfavourable for surveying, the water was never sufficiently smooth to allow a boat to cross over the banks. It was seldom that I could venture into less than 11 feet even on the inner edge.

The S.W. bank is much the shoaler of the two. It is apparently nearly dry in some places. Between its western edge and the shore is a channel which is sometimes used by the bar boats in returning, if caught to leeward in the offing. There has been a fair channel in this direction, called the *Alfama Bar*, a great part of which is now some feet above water. This is also the case with the old N.E. bar, or opening, which was close along the shore to the southward of the lighthouse, and by which vessels entered about ten years ago; it has gradually filled up since the present channel broke through. Further changes may be expected to take place at no very distant period; it appears probable that a passage will be opened a little to the north-eastward of the present one, as the bank is very narrow in that direction; the distance from 16 feet on the inside to 30 feet outside being very small.

From what came under my observation during the short time I was at Rio Grande, I do not consider that vessels of more than 11 feet draught are well adapted for the trade of that port.

A great number of vessels passed both in and out, generally drawing 10 to 11 feet; all above the latter suffered more or less detention; they were chiefly English, from 12 feet to 12 feet 6 inches draught. Six however, sailed, and one English brig, the *Agestes*, arrived (drawing 12 feet 9 inches), after having been forty-seven days off the port. The whole of these vessels were reported to have touched the ground on passing the bar.

The highest water occurs immediately before and during the continuance of the Ribojo or S.W. wind, which blows occasionally, generally lasting a couple of days. Vessels may be towed out, at its commencement, and others may run in, if prepared to take advantage of it; but it soon raises a very heavy sea on the bar, and renders it impassable. The change of weather also alarms the masters of vessels in the offing, they frequently stand off the land and lose the most favourable opportunities of entering.

Vessels above the usual draught for this port should get pilots on board as soon as they can. The ship's ensign hoisted at the fore-top gallant mast-head, is the signal for wanting assistance, when one of the bar boats will be despatched with a pilot, and having some casks of water in case of its being wanted. The pilots generally anchor vessels about 1½ miles S.E. of the bar, in about 7 fathoms sand and mud.

The pilotage of the bar is entirely in the hands of the Brazilian Government. The bar master has the temporary rank and pay of a lieutenant in the navy, and the pilots, and all others employed in that department, are part of the naval establishment, and subject to naval discipline. They appear to be very well provided with boats and gear for the performance of their duties.

A *very good steam tug* of 100 horse power lies at the buoy off the lighthouse, ready for service. This vessel belongs to a company of merchants; she is sometimes very actively employed, but the great expense prevents many from availing themselves of her services.*

Vessels waiting to sail, anchor abreast of the lighthouse rather over on the western shore in 7 fathoms, very good ground, sand and mud; they are expected to be ready to start at the shortest notice, and to keep the flags answering to their draught always flying, as soon as sufficient water is shown at the tower; having been visited by the bar master, they are at liberty to sail. The pilots do not always go on board, but keep ahead in their boats, directing any necessary change in the course by waving a flag.

The pilotage to the North, when past the shoal part of the bar, presents no particular difficulty, the water deepening rapidly, and the channel widening considerably, the bank on either side showing distinctly. On getting inside the points of the river, it is only necessary to keep the western shore aboard. It is steep-to, particularly abreast of the sandhills. An extensive flat stretches out from the eastern shore, leaving a deep channel of about half a mile. On the elbow of this shoal is a large red and white buoy, which you must pass to the westward of; another similar buoy lies in the channel to the north-eastward, which should also be passed on the westward side. From this buoy the channel runs across to the eastern bank; a very remarkable tall house among trees, kept a little on the starboard bow, is a good guide through the deepest part of the channel. A black buoy will be observed some distance to port, which lies on the West side of the entrance to the channel to St. Pedro. There is also a red buoy on the tail of the eastern flat; after passing which you may run close along the eastern shore to the northward, anchoring as convenient in from 8 to 6 fathoms abreast of the tower of St. Jose de Norte, where vessels of more than 10 feet draught are obliged to discharge part of their cargoes, to allow them to pass through the narrow and shallow channel to the city of St. Pedro do Sul, or Rio Grande, where they discharge the remainder, and having loaded to 10 feet, return to complete their lading at the North Town. This shifting is one of the inconveniences attending the situation of the principal town; it sometimes causes considerable delay from vessels remaining aground in the channel for several days.

---

* The *Iddo*, 200 tons register, paid £20 for steaming over the bar, drawing 12 feet 10 inches water.

The channel to St. Pedro is not entirely a natural one, a portion of it having been excavated by a machine. Since its formation it has partly filled up from the slipping down of the sides, and vessels constantly grounding have added to the evil. A vessel is now constructing at the arsenal for the purpose of deepening and improving it.

The shipping at the South, as it is called, lie moored head and stern, alongside a low wharf, in a narrow strip of deep water sufficient to accommodate three or four tiers of vessels.

The town is built on the North side of a very low peninsula, not more than 3 or 4 feet above the water; it is of some extent, containing about 6,000 inhabitants; its extremely low situation subjects it to occasional floods.

The trade of the Rio Grande appears to be very considerable; the interior navigation alone employs between 300 and 400 small craft.

A few vessels of burthen navigate to Port Alegre, the seat of government of the province, at the head of the great lake; but a bar obstructs the navigation for vessels of more than 9½ feet draught.

A few small steam vessels are kept in pretty constant employment in towing vessels between the anchorages, and carrying passengers to Petotos, and other places in the interior.

The tides in the harbour sometimes run very strong, but are very irregular as to time; their direction and velocity appear to be entirely governed by the wind. One and a half to 2 feet is the greatest ordinary rise and fall.

Adverting to the frequent complaints which have been made of unnecessary detention, negligence of the pilots, and mismanagement of signals, I can form but a very imperfect opinion. The trifling detentions that came under our notice appeared unavoidable; the pilots are not on such a footing as to induce them to incur any particular responsibility, as they receive regular pay without reference to the service performed. In shewing the depth of water on the bar, they make an ample allowance of from 3 to 4 palms for the swell, which may be sometimes more than is necessary, but it is not generally so. It is supposed by some that the pilots can run out in any depth they please, and that they mystify the pilotage. This opinion I consider absurd; they can have no marks to assist them in keeping clear of the knolls, which they assert frequently shift, and their only resource is that practice of groping about with poles to find the best channel. The only appearance of negligence I observed, was in their not having the bar boats out on two or three occasions sufficiently early in the morning, when vessels were off the port, and others waiting to sail, the water being favourable for passing the bar, and the weather moderate. Great complaints are made of the signals not being understood; that the red flag to approach the bar is frequently hoisted and hauled down without any apparent reason. The bar master told me that he was frequently obliged to haul down the flag, in consequence of one or more vessels running into danger, this obliging all to haul off, some losing their chance of getting in through the mistakes or stupidity of others.—*Nautical Magazine*, Nov. 1849.

5th. By Captain Downward of the *Irene*, 1851. The depth of water the *Irene* had on the bar of Rio Grande del Sud, whilst entering that port on September 2nd, was 15 feet, and sailing from thence October 12th, the least depth of water on the bar was 17 feet.

The new lighthouse was in a forward state of erection, and was to be lighted on and after January 1st, 1852, from which time a revolving light of the first order was to be shewn. Whilst coming over the bar, the new lighthouse was "on" with the centre of the block house that is attached to the fort, on the most easterly building, so long *as it remains in its* present position. One lighthouse cannot be well mistaken for the other, as the new one is 33 feet higher than the other. The winds are generally rotatory ones, travelling to the S.E., and should shipmasters be running towards the port, with the wind to N.E. and veered to N.N.E. or N., by the time they have made the bar, they should not attempt to beat their ships to windward, but take a position to the southward of the bar, as the wind will, in all probability, quickly veer to N.W. and S.W., when they will have the weather gage, and can enter with plenty of water.

On the Winds, Tides, and Currents, between the Island of St. Catharine and the Rio Grande de San Pedro; by M. Barral.

At the Island of St. Catharine the prevalent winds are N.E., N.W., S.W., and S.E. The N.W. winds bring fine weather; and, in the winter, the S.E. are extremely rainy.

The tides in the strait or gullet have been already noticed. The sea rises in the southern basin from the South to North, and in the northern basin from North to South; so that the streams meet and accumulate near the town, in the narrowest part of the strait; and they run out in the contrary direction.

On the beaches of the Rio Grande de San Pedro the winds from S.W., N.E., N.W., and S.E., are equally the most common; but those from the S.E. are most violent and dangerous. A vessel surprised by a gale in this direction, on the coast, must bear away. In a gale from E.S.E. the *Emulation* was carried toward the beach of Torres for several hours, and the sea, with 27 fathoms of water, everywhere broken, ran so high as to endanger the masts. During S.E. winds the sea is always heavy, and the current along shore runs with great rapidity. The winds commonly veer to the S.E., after having blown from the S.W.; and again changing are succeeded by N.E. winds, or variable, between N.W. and W.N.W.

St. PEDRO to the RIVER PLATA.—From the bar of St. Pedro to *Cape Santa Maria*, or St. Mary, at the entrance of the River Plata, the distance is 60 leagues. The coast between is generally low and flat, having within it numerous lakes and ponds.

THE CASTELHOS.—In the parallel of 34° 20′ are the remarkable rocks called the *Castelhos* or *Castillos Grandes*, 9 leagues to the North of which are the *Castelhos Chicos*. Mr. Luccock says, "The rocks called Great Castelhos consist chiefly of three large masses of naked granite, about 100 feet high from the water, with perpendicular sides and roundish tops. They appear close to the shore, and at a distance are thought to resemble castles built on the beach; but, if there be such a resemblance at any point of view, it vanishes on a nearer approach. They are backed by low woody hills; and the beach to the northward of them, as far as the Castelhos Chicos, is flat and sandy. There seems an expanse of water toward the West, which ought to be surveyed, as probably a harbour might be found, useful for small vessels, when the wind blows hard from the S.E. More than once I have known these rocks mistaken for Cape St. Mary; the cape, however, is very different, being a flat sandy point. The coast between them is low and naked, with inlets, some of which are said to afford good anchorage.

"Near to the little Castelhos is the Fort of Santa Teresa, whence the road (inland) to Maldonado is very delightful."

From the Castelhos Grandes to Cape St. Mary the distance is 7 leagues. The cape, which is low, is described hereafter.

Between Castelhos Point and Cape Santa Maria is a rock, not visible, but seen breaking at intervals only, by H.M.S. *Comus*, Captain T. S. Thompson, R.N., in August, 1845, on which the French ship *Sophia*, and the British brig *Jonathan Fell*, were wrecked. It is marked in the Admiralty chart as seen by H.M.S. *Ranger*, in 1827, bearing S.S.W. from the Great Castelhos Rock, 5 miles from shore. The mark to avoid it is, to keep the Great Castelhos Rock, which appears like a ship under sail, open to the eastward of the smaller or southern one, called *Palmasones Rock*.

From Cape St. Mary to the East point of Maldonado the bearing and distance are S.W. ¾ W. [*nearly W.S.W.*] 14 leagues.

VIII.—THE RIO DE LA PLATA.

The Rio de la Plata is one of the largest known rivers in South America, after the Amazon. It was discovered by Juan Diaz de Solis, in 1515; who navigated it as far as a small island in lat. 34° 23′ S., and who, having seen on the shores some cabins, had the boldness to disembark with ten men; when they were all put to death by the aborigines. Five years afterwards Sebastian Cabot, who, from neglect, passed from the service of the English to that of the Spaniards, was sent to discover the Strait of Magellan. But finding himself impeded in his views by the disobedience of his crews, was under the necessity of entering the River Plata, which he navigated as far as the island discovered by Solis, and to which he gave the name of San Gabriel. Seven leagues above this island he discovered a river, which he called San Salvador, and another at 30 leagues distance, which the natives called Sarcana; where he built a fort. He then pursued his voyage as far as the conflux of the rivers Paranà and Paraguay, and leaving the former to the West, entered by the second, and had a battle with the Indians, in which he lost twenty-five men; but succeeded in routing them, taking from them treasures of silver, which they had brought from Peru; and, supposing that there was an abundance of this metal in the territories washed by the river, called it Rio de la Plata (river of silver); whereby it lost the name of Solis, first given it by the discoverer.*

This river receives in its extensive course the water of various other large rivers. It is subject to inundations for many leagues from its banks, fertilising the land in the same manner as the Nile. The distance from the conflux of the Paraguay and Paranà to its mouth is about 200 leagues by the course of the river. It is interspersed with beautiful islands, and is navigable for large vessels.

The Rio Plata is at its mouth about 110 miles wide from Cape St. Antonio on the South to Point Negro on the North. From thence, to the junction of the Uruguay, it preserves its name, being afterwards called the Paranà. Although the whole of it is navigable, it has many shoals and rocks. Between Point Piedras on the South, and Point Yeguas on the North, it is 46 miles wide. The coloured water which it brings down is often visible in the Atlantic about 100 miles from its embouchure. The estuary of the Plata is generally shallow, and the navigation extends along the southern shores. Vessels drawing more than 16 feet of water can seldom approach nearer to Buenos Ayres than 7 or 8 miles; smaller vessels enter the inner roads to within about 2 miles off. The navigation of its gulf, though intricate among the extensive shoals, may hereafter be rendered easy by the aid of steam tug boats. The tides are perceptible as far as Buenos Ayres, but between Point Las Piedras and Point Yeguas the water is generally fresh.

The PARANA rises in the province of Minas Geraes to the South of the city of San Joas del Rey, in some lofty sierras, in Brasil, and flows a course for the estimated distance of more than 1,000 miles, receiving innumerable tributaries, many of them navigable from the North, West, East, and South.

At about 300 miles from its mouth two falls impede its navigation. The country through which it flows is temperate and very fertile.

The Paranà, which the first discoverers considered as the chief, on account of its abundant waters, joins the Paraguay in lat. 27° 16′, just above the town of Corrientes; and their united streams take the name of the Paranà. The Rio Paranà becomes navigable for vessels of 300 tons burden at the Island of Apipé, about 120 miles above its junction with the Paraguay. Below this junction it is studded with low islands, covered with wild orange trees and various trees and shrubs; the deepest channel has always from 2 to 3 fathoms of water. Before its junction with the Rio Uruguay it separates into numerous branches, which form a delta. Most of these channels are navigable for boats; that called Paranà Guazu has seldom less than 2½ fathoms of water, and that of Las Palmas is the next deepest to Guazu. This river and most of its confluents bring down from the countries within the tropics to the higher latitudes a great volume of water, which inundates the low districts along its banks from February to May. The waters rise in the end of December, and increase gradually to the end of April; they descend to their lowest point in July; along the lower part of the river the inundation rises about 12 feet above the lowest water level, and leaves a slimy deposit which enriches the soil.

---

* Another version of the origin of the name is given by the Spaniards, who say that Martin de Zousa, holding the *captainship* of St. Vincent, furnished Alexo Garcia, a Portuguese, with an escort to explore the wilds to the West of Brasil. By the route of the Tieté he reached the Paraguay, which he crossed, and penetrated into the interior. He returned, it is said, loaded with silver, and some gold; he halted on the Paraguay, waiting for his son, with some of his people, and sent at the same time to Brasil an account of the discovery. He was surprised by a body of Indians, who killed him and took his son prisoner. The following year 60 Portuguese, who were sent in search of Garcia, were also massacred. The Spaniards who first settled on this river seeing so much silver amongst these Indians, and supposing it to be the *produce of the country,* called the river La Plata.

The Paraguay River gives its name to the State. It was first navigated by Sebastian Cabot, in 1526. It rises in about 13° South latitude.

The Rio de la Plata forms the maritime division between the republics of Uruguay and Buenos Ayres, or the Argentine Republic. These unhappy countries, the scene of continual strife and warfare, have, as is well known, been under a system of blockade, from the armed intervention of the European powers. Should tranquillity be restored, and the noble resources of the countries be developed, they may hereafter assume a most important position among the nations of the world. At present all is anarchy and confusion, and, consequently, no authentic information can be given upon their actual condition.

The REPUBLIC of URUGUAY, or *Banda Oriental*, extends from the northern coast and banks of the La Plata to the southern boundary of Brasil. It is but imperfectly explored from the Atlantic to the River Uruguay. This state extends on the West along the Uruguay river about 300 miles, and on the Atlantic for about 200 miles. The average width, from East to West, exceeds 240 miles. Estimated area, 69,000 square miles.

Uruguay has generally an undulating fertile soil, with occasional broken interruptions, and is almost destitute of forest trees. The climate is temperate; it never freezes; rain falls abundantly during winter, but seldom in summer. Cultivation is neglected for pasturage. Cattle and horses form the wealth of the inhabitants. The articles of export are hides, skins, hair, horns, and jerked beef; sheep breeding and rearing is almost entirely neglected.

Monte Video is asserted to be favoured by nature, as if it had been selected for the display of fertility and beauty, and not less important on account of its geographical situation, at the mouth of the River La Plata, 40 leagues distant from the capital city of Buenos Ayres. Its climate, which has sensibly improved during the last 40 years, is temperate and humid; but, as that quality is moderated by the invariably dry land winds from the N.W., because they pass through the open plains of Buenos Ayres, and by its proximity to the ocean, the temperature of its atmosphere is the most healthy possible. In the year 1810 that province numbered a population of from 60,000 to 70,000 souls, including that of the city, which was not less than 20,000. In 1825, however, it scarcely contained from 40,000 to 50,000; that is, 10,000 in the city, and the remainder in the country. Monte Video was peopled little more than about a century ago by a colony sent from Buenos Ayres. At that time the country was occupied by a multitude of Indians, of whom now only remain the very few who live in the remote parts, known by the name of *Charrecas*.

The South shore of the river Plata is that of the State or Republic of Buenos Ayres, a member of the United Provinces of La Plata or Argentine Republic.

The REPUBLIC of BUENOS AYRES extends, it may be said, along the Atlantic Ocean from Rio Negro on the South, to the mouth of the Rio de la Plata; and along the whole southern shores of its estuary, and also along the southern banks of the Paraná as far as the Arróyo del Medio, a river which separates it from Santa Fé. The area within its boundaries is estimated at about 75,000 square miles; but this estimate is a vague calculation, and the limits of Buenos Ayres, from the disturbed state of the country, are not settled.

The northern part includes a portion of the eastern Pampas; the surface of the whole country is nearly flat, diversified by slight undulations. A very large portion of this State has a fertile soil for arable culture or pasturage. The climate of the northern portion is mild; ice is seldom formed. In summer the thermometer rises to about 90°. The North winds which prevail are as disagreeable as the sirocco of Italy. The south-western winds, or pamperos, blow furiously, sometimes accompanied by thunder and lightning. In the southern districts the climate is nearly as severe as in above 50° North latitude in Europe, but it is healthy. Both regions have sufficient rain for vegetation; the rains fall most abundantly before the setting in of the cold weather in April and May.

Cattle and agricultural products form the chief sources of wealth. The number of black cattle that pasture on the pampas is stated to exceed one million. Hides, hair, and horns are exported, and also tallow and jerked beef. The hides weigh from 50 to 60 pounds on an average. Horses are numerous, and, as well as mules and asses, are exported. Of late the breed of sheep has been improved, and wool constitutes an article of export. The cultivation of the ground was formerly so much neglected, that corn and flour were imported, but some wheat has been exported to some amount.

In the ensuing description of the coasts of the mouth of the La Plata we have extracted from the directions of Captain *du Brossay*, of the French Marine.[*]

CAPE SANTA MARIA.—This is a low point, difficult to make out, and you must be pretty close to distinguish the two small islets of *Paloma* and *Tuna*, which are not to be made out from the land when they bear to the West, but you can then distinguish the cape; it is a black and rocky point, with a white patch to the North, and another to the South. The best remark in this position is the direction of the land, which runs to the East, to the South of the cape, while to the North they run nearly North and South.[†]

At 6 miles to the North of the cape there is a house with trees to the North. It stands on a point easily known, because it lies on the middle of a beach of sand. It is the South point of the false bay, of which the shore is of white sand. You must be at less than 3 leagues from Cape Santa Maria to see it. In its latitude, and 9 miles off, the lead shows 11 fathoms, bottom of sand and shells.

POINT MALDONADO.—At 28 miles W.S.W. from Cape Santa Maria you will see Point Maldonado, on which stands a white house with some trees. This point is formed of rocks, darker and higher than the rest of the coast, which is white and low. You can come within 3 miles of it; the lead showing 8 fathoms, sand and shells, nearer the bottom is of rock.

MALDONADO is nearly 50 miles from Cape Santa Maria. Between the two points the land is uneven. From 3 or 4 leagues off shore it seems to be formed of white downs; when the weather is clear you can see the mountains in the interior.

---

[*] Instructions Nautiques sur l'Atterage et la Navigation de la Plata, par M. Chiron du Brossay, capitaine de corvette, commandant le brick *le Cuirassier*. *Annales Maritimes et Coloniales*, *Feb.*, 1845.

[†] More than 20 years ago Cape Sta. Maria was described as follows, by the Honourable *Captain Bouverie*, of the British navy.

"Cape St. Mary is a low point, with rocks all about it. The direction of the coast, to the westward of this cape, becomes more westerly than at any other part northward of it. At about 6 miles North of it is a house, with a row of trees northward of the house (probably a fence of high prickly pear bushes), which is very remarkable.

"About a mile South of the house is a bluff point, with a few rocks at the foot, which is remarkable, being different from the rest of the coast, the general character of which is a sandy beach. One cannot fail knowing the cape by these marks, running down the coast near it. If you are at any distance off you will not perceive them. The water off Cape St. Mary is shoaler than to the northward. To the north-eastward of the cape, between it and the islet Paloma, you have 10 or 11 fathoms, at a little distance from the shore.

"Ships in general make the land with N. or N.E. winds; therefore it is best to keep in the latitude of the cape, or a little to the northward of it, till you get soundings, as the current sets to the S.W. It is better not to make the land North of the cape; not that I believe there is any absolute danger, but the water in many places is shoal a long way off the land, and would alarm any one not acquainted with that circumstance.

"In lat. 33° 27′ S., and lon. 52° 9′ W. [52° 16′?], is a shoal, where we found 9 fathoms of water. I believe it is a ridge running in that parallel of latitude all the way to the shore. In lat. 34° S. is tolerably high land, on which is a fortress called *Fort Teresa*. It is a square, with bastions at the angles. It has three guns in the face and one in the flank, and stands about a mile from the beach. About 6 leagues N.N.E. from it is a mark set up, as the termination of the Spanish [*Argentine*] territories.

"*Being in the latitude of Cape St. Mary*, and having got ground in 28 or 30 fathoms of water, fine sand and shells, you may reckon yourself 20 leagues off shore; with from 15 to 20 fathoms, sand and clay mixed, you are not far off the land. When you have not seen the land before night, be sure to keep to the northward of the cape by your reckoning, to allow for the current, which sets to the southward. This is the case with the above-mentioned North and N.E. winds. With South and S.W. winds the current runs strongly the other way.

"I am inclined to think that the *strong north-easterly currents*, which are to be met with off the mouth of the Plata, when the wind is about to blow, or blowing, from the south-westward, *do not extend* much, if at all, beyond the bank of soundings.

On the western side of the bay of Maldonado, at two-thirds of a mile from the eastern shore, is a small low island, named *Gorriti*, once fortified, but at present only the ruins remain. Under its lee is the harbour, the beach of which is exposed to a heavy surf, which renders landing sometimes dangerous, at others impossible. This island forms two entrances, but that on the eastern side is very narrow. On the West the coast is bold and stony, the entrance 2 miles broad, and to small vessels safe; but, about midway, is a rock with 24 feet of water upon it, on which the English ship of war *Bedford* once touched and laid a buoy. The anchoring ground is near the centre of the bay, and here lies the wreck of a British ship, the *Agamemnon*.

The town of MALDONADO, which, from the sea, has no very attractive appearance, is 2 miles from the shore, standing on the brow of a hill gently descending 250 feet above the level of the water. The principal buildings form a quadrangle, and include a fine new church. The common habitations are built of brick, and covered with straw. The houses in the streets issuing from the square are chiefly low, and constructed of earth.

The best landing is in a cove under the S.E. point. Fresh beef and vegetables good and plentiful. Abundance of fish may be caught; but fuel is scarce in all the river of La Plata.—1824.

Of Maldonado the Hon. Captain Bouverie has said, "The Spanish surveys of this bay lay down a sufficient depth of water for any ship between every part of the island and the main; however, it cannot be safely entered but by small vessels, except to the westward; and you must not go farther in than to bring the N.W. point of Gorriti to bear S.S.W. ½ W., or S.W. by S. by compass, with 4½ or 5 fathoms, good strong clay.* With southerly winds there is, in the East passage, a heavy swell; and the water from the ground being uneven, breaks almost the whole way across in bad weather. The *Diomede* (fifty gun ship) passed through it to the anchorage before its dangers were known, and had not less than 18 feet; but there are places where there is so little as 1½ fathoms; and it is very irregular. There is a bed of rocks to the South of Gorriti; the marks for it are the tower of Maldonado, North, and the outer part of Point del Este, E.N.E. ½ E.

"In the direct line of the entrance of the bay, from the westward, is a bed of rocks, where there are parts having only 3 and a quarter-less 3 fathoms. The bearings, taken on the rocks, are, N.E. point of Gorriti, E. ½ S.; N.W. point of ditto, E. by S. ½ S.; S.W. point of ditto, S.E. by S.; Point Ballena, W. by N. ½ N.; the hill of Pan de Azucar, just within the extremity of Point Ballena. In mid-channel, between these rocks and the island, are 6½ and 7 fathoms; their distance from the island is about three-quarters of a mile. There are 7 fathoms close to them, all round the western side.

"The *watering place* is on the main, close by the battery; the stream loses itself in the sand, except when swollen by heavy rains, and you have to roll your casks about 60 yards over the sand; the water is very good."

Between *Point Ballena* and *Pta. Negra* there is no anchorage. You ought not to approach the land too close, although the dangers are near to it. The only ones that lie far off are the *banks of Solis* and *Afilar*, the first of which is 4 miles from the land, and lie S.W. of the *sierra de las Animas*.

To the West of Point Las Piedras, and to the North of Flores, lies the great beach of Santa Rosa. The coast is low, and appears to consist of sand, but in reality is of rocks. Frequently have vessels, constrained to run ashore, chosen this beach, believing it to be sand, and almost always have unfortunately perished. On all this coast, with winds from the East and South, the sea is very heavy, and the currents run strongly toward the land.

FLORES' ISLE lies W. ½ N. 56 miles from that of Lobos. On its S.W. extremity, which is 30 to 40 feet above the sea, stands a lighthouse, showing an intermitting light.† Flores may be seen from the deck of a ship at 4 leagues off in clear weather; at night the light may be seen 5 or 6 leagues.

---

* The best anchorage, says Captain du Brossay, is with the North point of Gorriti bearing S.S.W., and Point Ballena W. by N. ¾ N., in 4¾ fathoms, grey sand, good holding ground.

† The light tower on Flores was first lighted on the 1st of October, 1826, and it exhibits a brilliant light, with revolving eclipsers. It stands on the highest S.W. part of the isle, whereof the height above the level of the sea is 63 palms, or 45 feet. The height of the lantern is 75 palms, or 54 feet. So that the total height is 138 palms, or 99 English feet. But in 1845 the lighthouse was plundered of its lamps under the orders of General Oribe. It was reinstated,

To the South it is steep-to; to the North there is a rocky shoal, extending a mile out. At W. by S. ½ S. three-quarters of a mile, there is a rocky shoal, on which there is 23 feet water; with the exception of these banks there is good anchorage all round in 6 fathoms, muddy bottom.

To the N.W. and W.N.W., near the land, are the two banks of *Bucro* and *Carretas.* The *Nautilus* transport, on her passage to Monte Video, struck on a sunken rock between the Isle of Flores and the Carretas reefs; the lighthouse on the S.W. end of Flores bore E. by S. ½ S., the high land about Punta Brava or Bold Point, W. by S. ¼ S. The ship passed over, having struck four or five times. Immediately the anchor was let go, and the boat sent away, and found 17 feet water on it, and 5½ and 6 fathoms close to it. The rock is laid down in the Spanish charts, and H.M.S. *Nereid* struck on it many years ago (May, 1846).

It is better to pass to the South than to the North of Flores, because in the latter passage the current is violent, and you might be obliged to anchor.

At 11½ miles W. ¼ N. from Flores lies *Point Brava*, which is low and surrounded by rocks, which run out a short distance from it. This point is dangerous, and you ought to keep at a distance during the night.

SAN FELIPE de MONTE VIEDO.—After having doubled Point Brava, at 3 miles to the N.W. by N., you find the port of Monte Video, the entrance of which lies between the *Point San Josef* and that of the *Cerro* or *S.E. point.* On the first, which is a peninsula, stands the city. These two points lie nearly East and West, 2½ miles from each other.

The point of Cerro is to the South of the Cerro of Monte Video, on which stands the lighthouse, 478 feet above the sea. The light is *revolving*, visible 30 seconds in every 3 minutes, at 10 miles off, since July 16, 1852. The two points of the entrance are surrounded by rocks, but those of Point S. Josef do not extend far out. To the West of these rocks a buoy has been placed to show the wreck of a vessel, which you leave to starboard in entering. The rocks off the Cerro Point extend more than half a mile to the South, and are called *Piedras Blancas.*

Ratones Islet, in the N.W. part of the bay, is surrounded by a shoal; being well fortified, it would be difficult to attack the interior of the port. There are within the port two small banks, on which small vessels may touch. It has but little water throughout; at the entrance 15 to 22 feet, and within there is less. In the space before the part called Banos de los Padres there is a hole of 3 to 3½ fathoms not named in the chart. The anchorage is here good; and you are well sheltered by Point S. Josef, but unfortunately it is not convenient, and you are sometimes prevented from leaving by the low water. Throughout the bottom is of soft mud, so that, should a vessel ground, it will be harmless, even with winds from S.E. and S.W., which send a strong swell into the bay. With a gale from S.E. and East the current is violent, and the sea rises rapidly. Almost always, before the wind drops, the current reflows with such force that it brings ships across the swell, and makes them ride very uneasily. In fine weather there are flood and ebb tides, but nothing regular; the tide rises 2 to 4 feet. With North or West gales the river lowers very much; there are instances of it having done so 12½ feet. You moor S.E. and N.W. The bottom is so soft that you must give a good scope in order not to draw your anchors, 72 fathoms on each. Vessels of small draught can go within; those of 14 or 15 feet cannot enter further than to bring Point S. Joseph to bear S.E. ¼ E.; beyond that you will often run aground; those of a greater draught keep outside.* There is good anchorage in 23 feet, soft mud, with the Cerro bearing N.N.W.; Point S. Josef, N.E. ¾ E.; and the cathedral, N.E. by E. ¼ E. If, during the season of S.E. gales, you should get too near to Las Piedras Blancas, you can anchor with the Cerro bearing N.N.W., the cathedral, N.E., and Point Brava, E. ½ N., but you will be further from the land, and communication with it becomes as much more difficult.

SANTA LUCIA.—The entrance of the river Sta. Lucia is about 10 miles West of

---

but with a different character. According to the description in the announcement the revolution then took place in three minutes, in the course of which were two intervals of darkness, one of half a minute, and the other of a minute and a half duration, but there must be some error, as this is nearly the character of the light on Monte Video as before stated.

A subsequent statement, however, says that the reinstated light is *not a revolving one, and that a vessel had been lost in consequence.*

Monte Video; it is encumbered with banks, and only boatmen can enter it. Between Monte Video and Sta. Lucia is the *Panella* rock, formerly indicated by a buoy, which no longer exists. This is a rock nearly awash, and you are on its highest part when you bring Pta. das Yeguas and the tower of the cathedral in a line; Point Espinilla bearing N. by E. 5 miles distant. When the river is low this rock occasions a heavy surf, and which is readily seen.

We will not here speak of the channel to the North of the Ortiz bank, beecause none but small vessels can use it. At its N.W. end it becomes very narrow, and the *Pipas Rock* makes it dangerous. In this channel you can get water if you are pressed, and it is fresh, higher or lower in the river according to the prevailing winds. It is seldom that it is not good abreast of *Point Jesus Maria.*

To come here you must guard against the banks of Sta. Lucia, and that of the Barrancas of San Gregorio, which extends off the coast, and is possibly the bank on which the U.S. frigate *Potomac* grounded in 1839; the least depth found on it during the three days she was on the bank was 12 feet. This bank is not shown on *M. Barral's* chart.

If you ascend higher than Point Jesus Maria you must pay the greatest attention to a bank of sand lying W. some degrees N. of this point, on which there is only 13 feet water.

COLONIA DEL SAN SACRAMENTO.—Quitting the North channel you find the port of Colonia del San Sacramento. The entrance is rendered difficult by four islets, surrounded by shoals, *Farallon*, *San Gabriel*, and the two *Lopez*. A vessel drawing 14 feet can scarcely enter but with the wind aft. The best channel is to the South of St. Gabriel and Farallon. Coming from the South, some miles off, you can easily distinguish these two islets and the city of Colonia, built upon the *Point of San Pedro Alcantura.*

You approach Farallon, passing half a mile South of the islet in 17 feet water, muddy bottom; then run 2 miles N.E. by E. ¾ E., which will carry you one-fourth of a mile from San Gabriel. When the East point of this island bears West, you will then be in 17 feet, muddy bottom. Then place the head East. Farther in the depth increases on the easterly route, and you will find 18 to 23 feet. When the lead shows the latter depth the East point of S. Gabriel will bear W. by N. ¾ N. Then you must bear up to N.E. ½ N., and proceed to the anchorage in 25 feet, gravelly bottom, one-third of a mile from the city, of which the South point will bear E. ¼ S., and nearly 2 miles from the point of San Gabriel bearing W. ¾ S. There is a *fixed light* shown from the point of the city.

HORNOS ISLES.—The anchorage here is a quarter of a mile N.N.W. from the westernmost of these isles, in 3½ fathoms, muddy bottom. You can here easily cut firewood from the islands. A Danish frigate touched on a rock hereabout; but it is not marked on any chart, and its situation is not known.

SOUTH COAST OF THE RIVER.—The coast comprised between Cape S. Antonio and Buenos Ayres is low, and almost entirely uncultivated. There are some trees, in places, as described hereafter, and you may almost always see them before the land. There is but little remarkable, and it is very difficult to fix your position by bearings.

CAPE SAN ANTONIO is in lat. 36° 19′ 36″, lon. 56° 46′ 8″. At this part the coast, which runs nearly South, and is covered with a range of sandy downs, turns abruptly to the West, where it is very low, and covered with bushes. The depth and bottom, which from sand becomes mud, indicate your approach to it.

From Cape San Antonio to Pta. das Piedras it is 55 miles, and there are the East and West points of the great bay of San Borombon, of which you cannot approach the shore, because the beach is lined throughout with a bank extending 6 or 8 miles outside it, and you frequently cannot see the land at this distance.

None but small vessels can go to the *Arroyo del Tuyu*, the Rio Salado, or the *Rio San Borombon*. Between this last river and Pta. das Piedras, being 10 miles from land, in fine weather you may see in the interior an elevation, Mount San Juan Jeronimo, covered with trees, the only point of recognisance on all this coast.

PTA. DAS PIEDRAS, like all the South side of the Plata, is low, and a dangerous neighbour. At 6 miles off it there is less than 15 feet water, bottom of soft stone and small pebbles. This point is only to be made out by the lead and the bearings of the land. To the South it runs West; while to the North it runs nearly N. and S., as far as Pta. de la Memoria. The flat of soft and rotten stone extends farther out abreast of this last point.

You may know the approach to this part of the coast by the quality of the bottom. On the edges of the bank the lead brings up often stones of different sizes. It is seldom that you can get near enough to the land to see the hillock of Salvador Grande, lying a little to the North of Point de la Memoria.

From this point to that of Indio the coast runs N.N.W. for nearly 5 miles; the bottom continuing the same, but the small stones disappear according as you approach this latter point.

POINT INDIO is seldom seen, as it is so low. The pilots themselves frequently confound it with the hill of San Salvador. Off Point Indio a light vessel, hereafter alluded to, was moored in 1849.

The pilot Aizpurua (whose directions are given hereafter) says: You may know Point Indio by two clumps of trees, lying to the S.E. This point is low, covered with bushes, and less even than the rest of the coast; on its extremity is a large tree. Between the clumps of trees and the point you will see an uncultivated plain. In 3½ fathoms, nearly 9 miles off, you may see it in clear weather.

LIGHT VESSEL.—According to a notice, dated from *Buenos Ayres*, December 10th, 1849, a barque, called the *Condor*, was moored between Point Indio and the eastern extremity of the Ortiz Bank, and every night has a large lanthorn hoisted on the foremast, visible in ordinary weather at 9 miles off. By day a flag is shown when any vessel is in sight, for the guidance of ships entering or quitting the port. The light ship bears from Point Indio N.E. by N. 9 miles, and from the end of the Ortiz Bank S.W. by S. 7 miles, in lat. 35° 11′ S., lon. 57° 3′ W. By orders she has able and examined pilots always on board, for the service of any vessel applying for their aid.

" After passing Point Indio you will not fail to see the three first ombus which are on the lands of Sta. Magdalena. They are easily known; for, from Pt. Indio to the hills of the Estancias (country establishments) of La Magdalena, the coast is bare of trees. Before arriving at these three ombu trees you will see six or seven others in the village of La Magdalena, in the midst of which stands the church, with its two small towers, the eastern one higher than the other. Past the church there is a large ombu, with a small clump of trees; farther off, three other ombus together, the western the largest, and the centre one the smallest. Then comes two small copses on the banks of a river, and an ombu with two houses, which point out Atalaya Point.

" ATALAYA POINT.—The coast is very low, with sandy beaches. It forms the entrance of the *Arroyo de l'Atalaya*, where the low land ends commences the wood of Santiago de la Ensenada de Barragan, which is nearly 9 miles in extent. If you are not too far off you may see Point Santiago.

" Leaving the Ensenada you see the ombu of Point Lara, the highest on the coast; near it you see the tuft of bushes composed of thorns and peach trees, then follow the hills and village of Quilines."

ENSENADA DE BARRAGAN.—The port of Ensenada is in the form of a horseshoe, the entrance of which is open to the N.W. You leave, on entering, the Point of Santiago, which is low and covered with trees. At its extremity there is a small low island formed, covered with rushes and bushes, which narrows the entrance of the port. The channel leading to it is encumbered with banks difficult to clear. A pilot is necessary: the bottom is good holding ground, and there is never any sea. Vessels of 13 or 14 feet draught can enter; but the port offers no resources, although it was for a long time frequented by vessels bringing mules.

Before doubling the village of Quilines you will see the towers of Buenos Ayres, and the vessels moored in the great road.

BUENOS AYRES.—The city is built on the coast, elevated some 30 feet above the mean level of the river, which offers no shelter to vessels. Its two roads, formed by the banks of La Ciudad and Las Palmas, have no better anchorage than any other part of the river, which has muddy bottom. With winds between N.E. and S.E. the sea is very heavy, and the anchors very easily drive.

The GREAT or OUTER ROAD is a narrow channel of half a mile to a mile wide, formed by the Ciudad bank and that of Las Palmas, and has a depth of 16 to 19 feet, bottom of soft mud. At its eastern entrance there is a bar, which prevents large ships of war to enter it, as it has only 15½ feet water on it. They consequently remain outside at 6 or 7 miles off the fort of Buenos Ayres.

Las Palmas.—The flat of Las Palmas is a great bank formed by the sand brought down by the Uruguay and the Paranà. The depth does not decrease rapidly on it, but you ought to keep outside of 15 feet with a vessel drawing 13 or 14 feet.

The quality of the bottom on the Ciudad bank, or that to the South of the great road, is hard, and it is steeper than Las Palmas, and more care is therefore required in avoiding it. After passing the bar, the depth increases gradually, and the bottom becomes softer. When you find 17 feet water, soft mud, steer towards the anchorage, of which the bearings are, the fort, S.W. ½ S.; the flagstaff of the Carcasse, N.W. by N.; la Recoleta, S.W. by W. ¾ W.; you will then be in the best bottom, in 20 or 21 feet at low water. Vessels drawing only 13 feet water can go further in nearer the city, to the anchorage of *Los Posos.* They will have 15 feet water, hard mud, with la Recoleta S.S.W. To come to this anchorage it would be as well to take a pilot, although it is not difficult by following the ensuing instructions:—Leaving the anchorage above described, steer N.W. by W. ½ W. rather more than 2 miles, and then place the head to S.W., which, continued for a mile, will bring you to the anchorage of Los Posos.

Little Road.—The Inner or Little Road is formed by the Ciudad bank and the coast, which is lined with a bank of rotten stone. To enter it you must draw less than 11 feet water, and take a pilot. The bottom is bad holding, and the sea is heavy in S.E. or North winds, which seldom fail when strong to send some of the vessels ashore.

You land at the spot where stood the old mole, the remains of which cause the approach to be very difficult at times for the boats, particularly when the river is high.

Having thus described the coasts of the river, we shall leave the more particular descriptions of the channels and banks, occupying its centre, to be incorporated with the necessary instructions.

Landfalls, or Points of Recognisance, on approaching the Plata, and Directions by Captain Barral, of the French Marine.

These are three; the *Cape Santa Maria*, the isle *Lobos*, and *Cape San Antonio.*

Of Cape Sta. Maria the position, determined on land, has been found to be lat. 34° 39′ 1″, lon. 54° 5′ nearly. The variation of the needle. Feb., 1831, 11° 7′ East.

Although of very moderate elevation, this cape may be known by the vicinity of two islets, named *Tuna* and *Paloma*, which are separated from each other by a space of 43 fathoms in extent, and which forms a passage for small vessels drawing less than 10 feet of water; this is the entrance to a cove, sheltered by the cape and the two islets, wherein 7 or 8 vessels may lie in 11 or 12 feet.

The islet *Tuna,* the smallest and nearest to the cape, is covered with the cactus or prickly pear (or the tuna). On coming from the offing, in this direction, there will be seen an extensive sanddown, steep-to, followed by a very low beach. To the North, on a hill, is seen a group of houses, composing an *estancia*, or establishment for the rearing of cattle. Near these houses are some trees, and around are several inclosures.

The coast to the North forms a large bay of 14 miles in extent, with a point encircled by the islets Palmarones and Castillos. The islet Palmarones, near the point, is verdant; the Castillos arid and barren. The resemblance of the point to that of Cape Sta. Maria has caused several wrecks. For this reason the bay has been called *Bahia Falsa,* or *False Bay.*

At 2 miles to the East of Castillos are 14 fathoms of water, bottom of sand. From the islets of Cape Sta. Maria, at the same distance, are 10 fathoms, with sand, or sand and gravel. To the South, at 3 miles, 18 fathoms, sand; and to the S.W. 16 to 20 fathoms, bottom of oaze.

Lobos, or *Seal Island*, is not a mile in extent, but may be seen 15 or 16 miles off. It is destitute of vegetation, but is the resort of a great number of seals; whence its name. The eastern part must be avoided, because a chain of reefs extends 3 miles from it into the offing. Large ships pass safely through the channel between the isle and main, in 15 and 16 fathoms of water.

Cape San Antonio.—Under this name we comprehend a line of hillocks, composed of sand, extending to the East and the South, and terminating on the West by a very low coast covered with shrubs or small trees. The position, determined from the anchorage, is given as lat. 36° 19′ 36″, lon. 56° 42′ 22″. Variation of the needle, Dec., 1831, 13° 30′ East. The point determined is at the division between the sandhills and verdant shore. The cape is surrounded by a sandbank, which frequently breaks at a considerable distance from shore; it extends to the North and East, and should not be approached without caution.

Extensive banks, called the ORTIZ and CHICO, occupy a great portion of the central part of the river north-westward of Point Piedras, and they form three channels, of which the deepest is the middle one between the Ortiz and Chico. The general depths in this are from 3½ to 4, 5, and sometimes to 6 fathoms. In the southern channel, between the Chico and shore, the depths are 3½ and 3 fathoms; and in the northern there are only 3 and 2½ fathoms.*

WEATHER, WINDS, &c.—At the entrance of the river, and at Monte Video, the most prevalent winds are the N.E. and the S.W. At Buenos Ayres, and at La Colonia, the prevailing winds are from North, N.W., S.E., and S.W.

During summer, when the weather is fine, the winds blow over all the river pretty regularly, from the East to S.E., after 6^h a.m. to sunset. In the night the winds vary to the North.

S.W. and S.S.W. winds are known in the Plata under the denomination of *pamperos*, as coming from the pampas or plains over which they pass.† They clear the sky, and commonly blow after rain, or when the wind has varied from the North to N.W., and to West; and in the summer, after a calm and very hot day. Sometimes the pampero comes on after a strong N.E. wind, while the sun is obscured by clouds, when its gust is sudden and very dangerous. It thus meets the ships which are found in the Plata or near the entrance, and is indicated by a sudden fall in the barometer, which rises afterward.

As it rains more frequently in the winter than in the summer, this wind is more common in the rough season, and then lasts for two or three days. In summer it blows stronger, but generally ceases sooner. It is then designated in the country *Turbonado*, equivalent to the French word *Tourmente*, and to the English *Storm*.

---

* The government of La Plata caused large buoys to be laid down on the edges of several banks; but these buoys have frequently been displaced in rough weather, by the force of the currents.

The SOUTHERN CHANNELS were buoyed in the year 1823, when four *black* buoys were laid on the South side of the Ortiz, and four *red* ones on the Chico. Two other buoys have also been laid higher up, off the coast, between Point S. Iago and Buenos Ayres; but these buoys, we have been told, have often been missed or mistaken from want of marks, from being so far from shore, and from the strength and irregularity of the currents. Even the Atalaya church, which ought to be conspicuous, is difficult to distinguish, in consequence of its towers being so low and surrounded with trees: it can, therefore, be made out only by vessels of small draught, that can keep the coast on board.

Of the buoys, the first on the Ortiz (black) was laid on its N.E. extremity, at about 40 miles S.W. by W. ¼ W. [*W.S.W. ¼ W.*] from Monte Video, and 15 miles N.N.E. from Point Indio. It is described as lying in lat. 35° 6½′, in 2¾ fathoms, 5½ miles E.S.E. from an old beacon or wreck on the sand, visible at low water.

The first buoy on the Chico (red) lies about 23 miles W.N.W. ½ W. [*N.W. by W. ½ W.*] from that on the S.E. end of the Ortiz, in 3 fathoms, muddy bottom, with the Magdalena church bearing S. 15° W. 11 miles distant.

The last or N.W. buoy of the Chico lies over a muddy bottom, with Atalaya Point bearing S. 24° W. nearly 10 miles. The second buoy is laid 4 miles W.N.W. from the first or S.E. buoy, in 2½ fathoms. The third, N. 15° W. of the second, in the depth of 1½ fathoms.

The second buoy on the Ortiz bears N.W. ¾ W. 20½ miles from that on its S.E. end, and N.E. 8 miles from the buoy on the S.E. end of the Chico. The fourth bears N. by E. 6 miles from that on the N.W. end of the Chico. The third to the N.N.E. of the third, on the central part of the Chico: all in 3 fathoms. These buoys mark the large channel between the banks of 4, 5½, and sometimes 6 fathoms, according to the state of the river.

The *black buoy* on the *Ensenada Spit* lies in 3 fathoms, with Point S. Iago bearing S. 28° E., and Point Lara S. 53° W. That on the Bank of Lara lies with Point Lara bearing S.E. ½ S., and Point S. Iago S. 63° E., in the same depth, and at about 3 miles from shore.

† See the description of the pamperos, before given, and the remarks of Captain Beechey at *the conclusion of this section.*

When the weather is fine, and the wind light and constant, the tides are regular on the shores; but when there is any perturbation in the direction and force of the winds, the tides become irregular, and form currents, which frequently acquire a velocity of 4 and 5 miles an hour.

At *Buenos Ayres* the sea is high with winds from S.E., and low with winds from N.W. and S.W. At Monte Video and on the rest of the North shore the waters rise with S.E. and S.W. winds, and fall with northerly ones. The differences of level on the two shores rarely exceed 4 or 5 feet; but in strong N.W. gales the rise is, at times, 10 feet.

In the months of March, April, and a part of May, the river is higher than in the other months of the year, being raised by the increase of the waters of the Paranà and Uruguay, which bring down, at that time, trees and bushes from the verdant islets of the river. This is the finest season of this part of South America, with the winds moderate and temperature agreeable. During the spring, summer, and winter, the winds are almost constantly strong, and the temperature of the air very variable.

Anchorages.—Wherever the lead indicates oaze or muddy ground, you may drop an anchor, only taking care to be at a sufficient distance from the bank, and so as not to drive upward.[*]

With the winds in the southern quarter the anchorages on the South side are the best; but with northerly winds the opposite side is to be preferred.

Ships of war and large frigates may ascend to Monte Video; all ships drawing 16 or 17 feet of water may safely proceed to Buenos Ayres, on the one side, and to the Hornos islets on the other.

The anchorages sheltered from N.W., N.E., East, and S.E. winds are Maldonado, Monte Video, and Hornos. Those sheltered from the S.W. are the Ensenada de Barragan, and Buenos Ayres.

Small ships may also anchor at the entrance of the river of Santa Lucia, and at Colonia on the North coast, at the Rio Salado in the Ensenada de San Borombon, and at Riachuelo near Buenos Ayres on the South side.

You may anchor at Maldonado in 6 or 7 fathoms of water; at Monte Video, in the road, in 5 fathoms; in the harbour in 3 or 3¼; at the isles Hornos in 3½ or 4 fathoms; in the road of the Ensenada de S. Borombon in 4 fathoms; near Buenos Ayres, in the road, in 3½ or 4 fathoms; and near the town in 2 and 2½ fathoms.

In the anchorages of the North coast you ought to moor during S.W. winds, and in the others with the winds south-easterly.

Of all the ports and roads the best holding ground is at Maldonado; this is oaze covered with sand. Elsewhere the bottom is of soft mud, on which the anchors drag in gales of wind. During the pamperos the isles de Hornos present very good anchorage, the sea before them being broken by the bank of Palmas.

Depths of the River at the Entrance, and in the Offing.

When you have gained the parallel of Cape Santa Maria, and lon 51° 54′, the depth, at the distance of 33 leagues from the cape, is 80 fathoms, bottom of oaze; at 25 leagues the bottom is of sand, or of oaze mixed with shells, and the depths only 35 to 25 fathoms. On advancing nearer to the cape the decrease in depth is irregular.[†]

On the parallel of Castillos, 34° 24½′, at 33 leagues off, the depth of water is 52 fathoms, and the predominating quality of the bottom is of sand.

In navigating on the parallel more to the South, or that of Cape Santa Maria, less water will be found in the same longitude, and the depths gradually diminish.

---

[*] "A fact worthy of remark is, that almost throughout the surface of the banks in the Rio de la Plata, when the upper stratum is a mixture of black sand and mud, the second bed, that which the anchors penetrate, is formed of clayey mud, very tenacious."—Lieut. *du Périer*, French Marine, Ann. Marit. et Col., May, 1842, p. 11.

[†] At the distance of about 30 miles from the coast about Cape Sta. Maria there appears to be a ridge or series of detached spots, which have a much less depth than is to be found in their offing or within them. Some of these soundings of 11 and 12 fathoms, surrounded by depths of 20 to 30 fathoms, are marked on Captain Heywood's chart.

Since the date of that work we have some announcements which show that these shoaler

At 15 leagues from Cape St. Antonio is a depth of 15 fathoms, sand: at 28 leagues from the same cape to the S.E. are 40 fathoms, similar bottom. To the North of the cape, at 5 leagues from land, are 6 and 7 fathoms: and in the direction of the English bank, on the parallel of 35° 11′, are 5 and 6 fathoms, with sandy bottom; at 5 leagues without the same, near the meridian of 55° 35′.

When turning in, on the parallel of 35° 20′, and having attained the same meridian, the bottom has been found of fine sand, the lead indicating about 7 fathoms of water. On the parallel of 35° 35′, and thence to Cape S. Antonio, the bottom is of sand, mixed with shells or gravel.

From the latitude of 35° 20′, having passed the meridian of the English bank, the depth does not increase to more than 7 fathoms. On the parallel of 36° it attains 10 and 11 fathoms. To the West of the bank, on this parallel, are 5 and 5½ fathoms only.

At 20 leagues off from the entrance of the Rio de la Plata the water loses its blue colour, and assumes that of green tinged with yellow.

On running for the North shore, when in view of or near the land, the quality of the bottom will be oaze. When running on a parallel a little higher than that of the Isle Lobos, on the North of this isle, oaze will also be found; at 2 miles South of it are 14 and 14½ fathoms of water; and, at 6 miles, 20 and 21 fathoms. From Lobos westward, toward Monte Video, the depths of water diminish gradually but irregularly.

In the passes, formed by the banks of hard sand, situate between Monte Video and Buenos Ayres, are from 3½ to 5 fathoms of water.

NAVIGATION AT THE ENTRANCE, AND IN THE RIVER.*

The preceding description indicates the precautions requisite to be taken on approaching the different points of the entrance. On advancing, it is prudent to prefer the North coast, that only being elevated.

Some navigators have pretended that they can always judge of their position without a view of the land; by the depths of the sea, and an inspection of the divers qualities of ground gained by the lead, but this must be incorrect; for, in exploring the offing on all these coasts, soundings were frequently found similar to those off the river; and the resemblance, if depended on, may cause dangerous errors.† We therefore advise mariners

---

spots may be more numerous than before supposed. Thus in the *Annales Hydrographiques*, vol. III., 1850, p. 6, it is stated that Captain Doynel, of the French barque *Omega*, found a bank which he had met with in several voyages. In coming from sea on the parallel of 35° 5′, the depth being from 35 to 40 fathoms mud, and sand and mud, the soundings gradually diminished to 12 and 10½ fathoms sand, and sand and gravel. The bank was considered to be some miles in extent, and gradually deepened to 18 and 20 fathoms, before making the Island of Lobos. Its centre is in lat. 35° 8′, lon. 51° 43′ West, about 30 miles S.E. by S. from Cape Sta. Maria.

This is not the first time these banks have been noticed (they are not shown on M. Barral's chart). Captain *Sergent*, in 1832, found a shoal of 11 fathoms in lat. 34° 53′, lon. 53° 6′. In 1835 the same commander crossed the bank in lat. 35°, and found 12 fathoms. Captain Ricaudy, of the French corvette *Ariane*, found 11 fathoms in lat. 35° 23′, lon. 54° 29′. (*Ann. Maritimes*, 1836, pp. 152, 154.)

Now if these soundings are placed on the chart, and connected with those of Captain Heywood, it will be seen that they occupy nearly a straight line of above 60 miles in extent, in a S.W. by W. and N.E. by E. direction, parallel to the direction of the coast between Lobos Island and the Great Castelhos, and consequently in the line of current which flows out of the Plata. They may be of a shifting character, but it will demonstrate that great caution in judging by the lead must be used here.

* Ships proceeding to Buenos Ayres will find pilots at Monte Video, and also in a vessel which is moored some miles to the N.E. of Point Indio. This vessel usually hoists a light during the night, but it must not be depended on.—Captain *Chiron du Brossay*, 1845. It was announced to be re-established in 1849.

† Notwithstanding the opinion here expressed by *M. Barral*, another French officer, *M. du Périer*, in a subsequent publication, holds a different view. "Every navigator ought always to remember that, however favourable the circumstances may be under which he is navigating this river, he ought to pay the greatest attention to the indications afforded by the *ground log*, and more particularly to the lead, which has a just claim to the title of 'The compass of La Plata.'"—Notes sur l'Atterissage du Rio de la Plata, par *M. du Périer*, Lieut. de *vaisseau*. *Annales* Maritimes et Coloniales.—May, 1842, p. 18.

not to attempt making the river without being previously well assured of their position by observation of latitude and longitude, and always to advance with precaution, on account of currents which may happen to prevail between the hours of observation.

If the wind be steady from N.E., when you approach Cape Sta. Maria, that will be an advantage which will allow you to reconnoitre a greater extent of coast before entering the river: but, under other circumstances, a sight of Lobos is, in the first instance, to be preferred; as you may thus avoid being windbound on the North coast, and have a better chance of plying to windward. It has been already noticed that the landfall of Cape Antonio is both difficult to make out, and dangerous to approach, unless in favourable weather.

Having arrived to the southward of the Isle Lobos, at the distance of 2 or 3 miles, the direct course for the isle and lighthouse of Flores will be W. 7° N., *true*, or W. ½ S. by compass: but as the Plata is subject to very variable currents, such must be allowed for on approaching the North shore, taking care, at the same time, not to fall too far to the southward or towards the English bank. On approaching land you may, in good time, see the round tower of Maldonado and the high lands to the westward; and in continuing the route, at the distance of 5 or 6 miles off, distinguish a point formed of black rocks, with beaches of sand to the right and left of it. This point, called *Punta Negra* (Black Point), is situate at 14 miles westward of Maldonado; it is the western point of a great sandy bay, over which the high lands are remarkable, as appearing to rise, like a great white border, from the shore of Maldonado and the extreme points of the bay, *Ballena* and *Negra*.

When you are on the meridian of Punta Negra, at the distance of 6 miles, the Isle of Flores will again bear W. 70° N., *true*, or W. ½ S. by compass. Here you will have 11 or 12 fathoms of water, oazy bottom, and may thence proceed with perfect safety.

Beyond the lands situate to the North of Punta Negra the coast makes a break or aperture, and thence becomes very low. On steering in sight of land you may now distinguish the *Hills of Afilar*, situate in lat. 34° 47′ 15″: when these bear N. by W. (by compass), and the nearest hill of Punta Negra bears N.E., you will be 27 miles eastward of Flores, in 11 or 12 fathoms of water, oazy bottom, and the isle in a line with Lobos. The hills of Afilar are insulated, and resemble two mamelons, or tetas, or paps.

On proceeding upon a course W. ½ S., as above, you may see, from the mast-head, the light tower on Flores, at the distance of about 12 miles. This isle, when first descried, resembles three islets; afterward the lower part gradually rises from the horizon; and at 5 miles off the whole comes in sight. When the sea is high, the isle, when first seen, appears in two portions only.

On coming in by night you may see the revolving light on Flores directly ahead, and may approach it to the distance of 4 miles; then passing it to the southward at 2 or 3 miles. Between Flores and the English bank the bottom is of oaze, and the general depth 6 and 7 fathoms. The distance between is 10 miles.

From the Isle Flores to the harbour of Monte Video the distance in a right line is 16 miles, W. by S., which will lead clear of the *Punta Brava*, 4 miles to the eastward of that port. This Punta Brava is formed by a line of rocks projecting into the sea. One shoal, detached from the rest, requires a berth on passing. A large white house stands to the North of the point, and a smaller one is situate toward the middle of the rocks.

On leaving Flores, when the weather is clear, the Cerro or hill of Monte Video comes in sight; and, in some time after, the steeples or towers of the cathedral in the city will be seen.

With the wind from the North, or the N.E., you may steer by night to the W. by S. for doubling Point Brava; but with the winds from the S.E. or E.S.E. it will be prudent to steer W S.W. You ought, in precaution, either in one case or the other, to keep the light on Flores E. by N. or E.N.E., with an assurance that the currents will not set the ship in the direction of Point Brava.

When the Cerro or hill called Monte Video bears N.W. the point will be doubled, and you may proceed on the starboard tack, so as to gain the anchorage. A large vessel, after passing Brava, may proceed W. by S., and find anchorage in the Great Road in 5 fathoms. At a mile to the South of Point Brava are 5 fathoms of water.

In the track from Lobos to Monte Video, as in all those in the interior of the river, the rate of way must be measured by the log, and the current by a boat, in the usual manner.

so as to ascertain whether it be in favour of the ship, or otherwise. The route will be modified accordingly.

As all the coast between Punta Negra and Flores may be approached to the distance of 5 or 6 miles, it is best by night to make the tacks on the starboard side. The revolving light on Flores will, in this case, be clearly seen, and you may pass to the southward of it, leaving it at the distance of 4 or 5 miles, which will lead at a sufficient distance from the English bank, in 6 and 7 fathoms.

The Cerro or hill of Monte Video is 478 feet high above the level of the sea. The lighthouse on its summit, originally exhibiting a fixed light, has since July 16, 1852, shewed a revolving light visible for 30 seconds in every 3 minutes, at 10 miles off. It was formerly very irregularly shewn, and latterly (that is, during the revolutionary troubles) not shewn at all. But some caution is required in making this light, as the light on Flores has been stated to be of the same character, revolving in 3 minutes; there is some error here, but it is likely that the Flores light does not revolve.

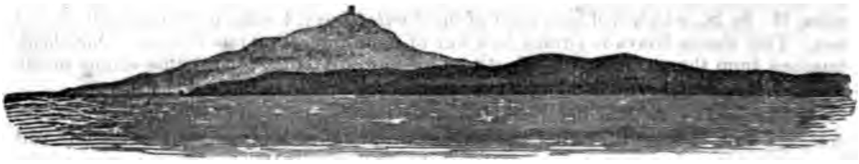
Should you attempt to make Monte Video, by passing to the southward of the English bank, you must pass this shoal, from the entrance of the river, on the parallel of 35° 30′, steering W. by S. with northerly winds, and W.S.W. with the wind southerly.

On passing over the great bank the soundings will be fine sand, then ordinary sand, afterward oazy sand, and lastly oaze, when over the bank, and on the meridian of Monte Video. You will then, by steering North, gain sight of the mountain, which may be seen by day, in clear weather, 9 leagues off.

If, notwithstanding the precautions indicated, you fall on a bottom of 5 fathoms, in passing to the southward of the English bank, by tacking to the N.W. you will soon after gain from 6 to 8 fathoms.

In thick weather, or if the true situation of the ship be uncertain, in any part of the river, you may always anchor, rather than continue your route.

The Bay of Monte Video is 2½ miles in extent, and its general depths are from 15 to 9 feet of water. The city, named that of San Felipe, or St. Philip, is on the eastern side, as shown on the particular plan of the harbour, and stands on a peninsula. This place is the capital of the Republic of Uruguay, formerly called the *Banda Oriental.* The anchoring ground is good, but exposed to the *pamperos*, or S.W. winds, which at times raise the water 5 or 7 feet above the ordinary level. On the western side is the hill from which the harbour derives its name, as already noticed, and on which stands the lighthouse; the other part of the coast is low. The neighbouring country is pleasantly diversified and well watered, but totally bare of trees, and without a trace of cultivation. Neither wheat nor maize is raised here; but there are plenty of melons, calabashes, figs, peaches, apples, and quinces; and cattle are as abundant as in any other part of the country. The air is generally wholesome, but the winter boisterous and cold, and the summer subject to violent thunder storms and heavy rains. The exports to Europe are mostly hides and tallow; to the West Indies jerked beef.



Punta Brava, or Bold Point, W. by N. by compass, 12 miles, and Monte Video lighthouse appearing over it.

The best anchorage is described by Captain Heywood hereafter; we therefore only add that there is a shoal in the eastern part of the bay, called *El Bajo de la Familia*, and lying at nine-tenths of a mile N. by E. from the extremity of the eastern point, called that of *San Jose*, about which, likewise, there are several rocks. The depths between are from 15 to 9 feet.

Routes on proceeding to Buenos Ayres.

Those vessels which do not take the passage by the Isle of Flores, but enter on the parallel of the Punta das Piedras of San Borombon, or 35° 28′ S., may proceed on this parallel to the distance of 7 miles from the Point, which is very low, and cannot be well seen unless the weather be clear. On approaching it, you will see several woody hillocks, the most conspicuous of which will bear nearly N.W.* From off Point Piedras the route to the N. by W. between the Banks is the same as for going up from Monte Video.

Vessels drawing less than 9 feet may pass in general over all the banks situate between Monte Video and Buenos Ayres. Those under 13 feet may pass between the Chico Bank and the South shore. Those drawing 15 feet may pass between the Ortiz Bank and the North shore. Those of 16 or 17 feet may take the passage between the Ortiz and Chico Banks. Of these, in order:—

Passage between the Chico Bank and the South Shore.

On quitting Monte Video you steer S.W. (by compass) 30 miles, in order to avoid being set on the Ortiz Bank by the current. Thence you may see the land to the W.S.W., and may recognise Point Indio, or rather the hillock Salvador Grande, to the S.E. of it.

Point Indio lies in lat. 35° 15′ 20″, and lon. 57° 10′ 19″, at 52 miles from Monte Video. It is very low, and distinguishable only by the woody hillocks to the south-eastward of it, while the coast to the West is flat and destitute of hummocks.

When you are about 9 or 10 miles from the Point, or the Salvador Grande, you thence proceed along the shore to the W.N.W. until you see the three ombus† or trees of the Magdalena, and afterward the church of the same name.

When the first ombu bears S. by E. (by compass), you will be on the meridian of the eastern part of the Chico Bank. With the church in the same line of direction, you will be in the middle of the passage. In moderately fine weather you may afterward distinguish, on the coast, to the West, a large insulated ombu on a hillock far off, with three others forming a single group.

On following the land in sight, you tack on one board and then on the other for gaining the limit of the tufa, or hard sand, which exists in this part of the river, leaving it at the length of 2 or 3 cables, and in gaining, alternately, a bottom of tufa and of oaze. Thus you will avoid falling on the Chico Bank.

When you see two small elevations covered with furze and trees, and an ombu by the side of two low houses, you will have passed the Strait. When on the meridian, or to the true North of these elevations, you will be quite clear of the channel, and may continue your course to the N.W., until you get up to the edge of the Ortiz.

It will now be requisite to keep in the first instance at two-thirds over from the South shore, in order to avoid the *Banks* of *Lara* and *La Cuidad;* and, in the second instance, it will be prudent to pay a strict attention to the lead and soundings. The depths will probably increase to nearly 5 fathoms, and then gradually diminish to 3 fathoms. Having arrived at the last depth, you will be on the edge of the Ortiz, and will see a cape to the West.

This route will bring the ship toward the South coast, and in sight of the village of *Quilmes*, situate on a small hill, having on it several ombu trees, and beyond it the cupolas and steeples of Buenos Ayres, with the vessels anchored in the Great Road. It is proper, when these different objects are well in sight, to steer W.N.W., for avoiding the Ciudad Bank. When the towers of the cathedral bear S.W., you will have entered the outer road of Buenos Ayres.

Passage between the Ortiz and the North Coast.

On leaving Monte Video at the distance of 6 miles, care must be taken to avoid the *Panella Rocks*, the side of which is marked by a large iron buoy, held in its place by a chain and a strong anchor, and which was laid down in 1831.

The *Panella* lies in lat. 34° 54′ 45″, lon. 56° 24′ 32″. From its centre the *Point Yeguas* of the hill of Monte Video appears in a line with the steeples in the city, and the

---

* This hillock is named the *Salvador Grande*. It is situated between the Point Piedras and Point Indio. The hillock to the East of Salvador is the Salvador Chico, or Little Salvador. The pilots often confound the Point Indio with these hillocks.

† The *ombu* or *amber tree* (a species of elder) is a tree which grows on the shores of La Plata. It is large and tufted like the walnut tree, grows very quick, and is serviceable only for firewood.

Point Espinillo, N. by E. 5 miles. This flat is never uncovered, excepting when the water of the river is very low, and causes a long ripple, which may be clearly seen.

Espinillo Point, though low, is distinguishable, because it terminates the line of coast extending from the Cerro of Monte Video, and it thus forms the eastern side of the entrance of the River Santa Lucia, 11 miles to the W.N.W. from Monte Video.

Having arrived on the meridian of Espinillo Point, and advanced beyond the River Sta. Lucia, steer W. by N., following the direction of the land, at the distance of 6 or 7 miles, and you will thus avoid several small banks of sand which lie at some distance from the shore. Hence you soon perceive some notched mountains of moderate height, named the *Barrancas de San Gregorio*, or of *Sta. Lucia*. When to the South of their western extremity, named *Punta de Jesus Maria*, you steer W.N.W. until you bring that Point to E. ½ N. Afterward you make a cape to the north-westward, and when it comes in sight, take notice of the *Punta del Saucé*, the only part of this coast which is woody; its lat. is 34° 25′ 21″, in lon. 57° 24′ 58″.

After coasting along shore, at a short distance, you pass to the northward of a dangerous bank of rocks, several of which appear above water, and are known under the name of *Pipas*. On arriving near the Point of Colonia, you will have passed through a narrow passage of increased depth, the South side of which is formed by the Ortiz Bank.

When you have arrived before the town of Colonia, you leave on the right, in proper time, the Isles of San Gabriel, Farallon, and Lopez, and steer thence directly S.W. for the direction of Buenos Ayres.

The navigation to the South of the *Chico Bank*, and to the North of the Bank of Ortiz, is not practicable without leading winds and a favourable current.

PASSAGE BETWEEN THE ORTIZ AND CHICO BANKS.

You proceed from Monte Video S.W. to the distance of 9 or 10 miles off the Salvador Grande, and then W.N.W. until you have the first ombu tree of La Magdalena to the S.E. Thus you will avoid the Banco Nuevo; after which the route is N.W. ¼ N. This course leads directly to the edge of the Ortiz Bank, which may be known in obtaining the depth of 3 fathoms and 3¼ fathoms. On proceeding hence to the West you will perceive a headland, and next the village of *Quilmes* and *Buenos Ayres*.

If the winds are up and the current favourable, you may tack on short boards, between the Ortiz and Chico, giving the preference to the side next the Ortiz, because the decrease of depth on that side is progressive and regular. If the current be adverse, you may anchor between the banks, and avoid the tufa or hard sand, which is commonly found in the Plata.

ROUTE TO THE ISLES OF HORNOS.

If you proceed from before La Colonia, or come from Monte Video to the northward of the Ortiz, leave the isles on the right, and when you bring the Farallon to the North, steer N.N.W., and next N. by W. The three Isles of Hornos lie in a line, the last above Colonia, and are covered with small rugged trees. There is anchorage to the N.W. of the outer isle, at 1 mile or 1½ miles from the shore.

La Colonia is situate in lat. 34° 28′ 14″, lon. 57° 49′ 14″.

REMARKS BY CAPTAIN PETER HEYWOOD, OF H.M.S. NEREUS.

The following REMARKS concerning the WINDS, WEATHER, TIDES, CURRENTS, SOUNDINGS, &c., in the RIVER PLATA, with instructions for navigating therein, by Captain Heywood, were first published in the year 1813, with the following preface:—

"*Captain P. Heywood, of His Majesty's ship Nereus, having been for three years on the Brasil station, and the greater part of that time in the River Plata, had the opportunity to observe that the loss of many vessels in that river was occasioned by the masters wanting proper directions for its intricate and dangerous navigation. Captain Heywood, on his return to England, very obligingly transmitted to the Committee for managing the affairs at Lloyd's his observations and instructions for the safe navigation of the Plata; which the Committee are happy to publish (with Captain Heywood's permission) for the benefit of all persons navigating that river.* *Lloyd's, October,* 1813."

WINDS, &c.—At the entrance of the River Plata the prevailing winds, during the summer months, from September to March, are north-easterly, with tolerably clear weather overhead, but a dense atmosphere near the horizon. These winds haul gradually to the eastward as you advance up the river; and about the full and change of the moon, strong breezes from the south-eastward are common at this season, accompanied with rain and foul weather. At Buenos Ayres during the summer months the S.E. winds are generally fresh in the day time, hauling round to the northward in the night.

During the winter months, from March to September, the prevailing winds, at the entrance of the Plata, are S.W., or more westerly; but up the river, more generally from the northward, than the southward, of West.

The winter season is the best, in point of weather, at Buenos Ayres; for the winds being chiefly from N.W. to S.W., the water is smooth, and the communication can be kept up between the shore and the shipping with more facility. The weather is sometimes, but not frequently, foggy. Fogs are most common in the months of July, August, and September, and prevail more at the entrance of the river, as far up as the S.E. tail of the Ortiz, than above the banks.

TIDES, &c.—As it cannot be said that there are regular tides in the Plata, but currents as uncertain in their duration as they are irregular in their rate and direction, no certain allowance can be made for them; therefore a ground log should always be used, to know the course made good and distance run.

The tides, speaking generally, when the weather is fine and settled, and winds moderate, do not, in any part of this river, rise and fall more than 5 or 6 feet; though at Buenos Ayres, at the distance of 8 miles from the city, we found in His Majesty's ship *Nereus*, when the winds were strong at N.W., so little sometimes as 15 *feet* water; with strong breezes from E.S.E. to S.S.W. the depth was upward of 5 *fathoms;* but, except on such extraordinary occasions, we had between 17 and 22 feet of water. I have heard, however, some marvellous stories of the river having been almost dried up, across from Buenos Ayres to Colonia, during heavy westerly gales.

PECULIARITIES of WIND, TIDES, and CURRENTS.—The River Plata has many singularities; which I think may in a great measure be accounted for from its formation being so different from any other known river. Its entrance, being very wide and very shallow, it is affected by every change of wind in a most extraordinary manner; so much so, that a shift of wind may be predicted almost to a certainty, by observing carefully the state of the mercury in a barometer and the set of the currents, which usually shift before the wind. In *calm* weather the currents are generally very slack; and then as regular almost as tides; setting up and down the river alternately. When the winds are variable, the currents are equally so; and I have known the *Nereus* to be current-rode four different ways in less than 6 hours. When the current comes in from the eastward, along the North bank of the Plata, a north-easterly wind may generally be expected to follow; and at the same time (should the wind have been previously to the S.E.) the mercury in the barometer will fall a *little;* but much more if the transition be quick from S.W. without stopping in the south-eastern quarter.

When the wind continues in the N.E. quarter the mercury is more depressed (according to its strength) than with any other wind, and there is usually, *then*, a set *into* the river on the North bank, and *out* on the *opposite*. Indeed, whilst the winds are between N.E. and S.S.E., the current generally runs to the westward past Monte Video, though without much augmenting the depth of water off that place, but filling the river above the banks.

The winds between N.N.E. and W.N.W. make the water lowest, the outset being then strongest along the South bank of the river, past the Points Del Indio and Memoria, but very inconsiderable along the North bank.

Before the setting in of a S.W. gale, or *pampero*, the weather is usually very unsettled, and the winds unsteady and variable in the northern and north-western boards, preceded by a considerable fall in the mercury, though it usually rises a little again before the wind shifts to the S.W., and often continues to rise, even though the wind may increase from that quarter.

Before these winds set in Buenos Ayres, the current runs up and fills the river unusually high; at the same time as strong an outset is experienced along the North bank, which continues whilst the winds are strongest from W.S.W. to South, seeming to prove that these winds force up, from the southward, a large accumulated body of water past Cape St. Antonio, which can only find a passage out again by the North shore, where they increase the depth of the water, as well as up the river, and particularly in the shallow harbour of Monte Video. Whilst these S.W. winds blow, the air is cold, and the atmosphere clear and elastic, in a degree rarely to be met with in any other part of the world. They are generally succeeded by some days of fine, serene weather, the wind continuing moderate from the southward, or varying to the eastward.

I have never known the velocity of the tide or current, in the River Plata, anywhere to exceed 3 knots per hour; but I have heard it said by some that they have found it run at the rate of 6 or 7 miles an hour!

As the winds outside the River Plata, and particularly about Cape St. Mary, are most frequently from the north-eastward and northward, except when the S.E. summer, and S.W. winter gales blow, about the times of new and full moon, I consider it, on the whole, most advisable for ships bound into the river to get in with the land about the latitude of that cape, which is 34° 40′ S., and its longitude 2° 9′ E. of Monte Video.

SOUNDINGS on ADVANCING to the RIVER.—In lat. 33° S. the bank of soundings extends off the land full 36 leagues; where the depth of water, in lon. 50° 20′ W., is 94 fathoms, and the quality of the bottom dark olive coloured mud, or oaze, as it is all along the outermost verge of the bank.*

In lat. 34° S., and 30 leagues from the land, the bank is steep, and the soundings decrease quickly, in standing to the westward, to 25 fathoms, 20 leagues from land.

In lat. 34° 20′ S., and about 30 leagues East of the Great Castelhos rock, the depth is 63 or 64 fathoms, dark mud. In standing in for the land, between the Great Castelhos and Cape St. Mary, the water shoalens, in a short distance, from 60 to 25 fathoms, and the quality of the bottom changes to sand, which grows coarser as you approach the coast, and as far as 7 leagues off shore is intermixed with shells. This bottom is found only in, and to the northward of, the latitude of Cape St. Mary, unless very close in with it.

To the southward of 34° 40′ S. the bottom is chiefly mud, intermixed with fine sand or gravel; and if a ship happen to be set to the southward of Cape St. Mary as she hauls in for the land, yet keeps to the northward of Lobos, she will get out of fine sand into dark mud, which is the quality of the bottom (chiefly) between Cape St. Mary and Lobos, as well as 8 or 9 leagues to the eastward of that island, and the depth of water between them is generally 26 to 20 fathoms.

In lat. 35° S., lon. 52° W., or 42 leagues *true* East of Lobos, there are about 90 fathoms of water, dark sandy bottom, from whence the bank of soundings takes a S.W. direction. East of Lobos, 27 leagues, the depth is 25 fathoms; and in steering in, on its parallel, the same depth, nearly, continues till very near that island. But if set a little to the southward of Lobos, the water will shoalen even to 10 fathoms, perhaps on a hard, sandy, or gravelly ridge, that extends all the way from the English Bank, in its parallel, as far as lon. 52° 30′ W., or full 18 leagues to the eastward of the meridian of Lobos.

Thus the approach to this river cannot be considered dangerous, if proper care be taken in navigating, and due attention paid to the lead, and to the course steered.

Agreeing in opinion with Captain Bouverie that, generally speaking, it is advisable to make the land about Cape St. Mary, I would also recommend, if the wind should be anywhere between S.E. and N.N.E., to enter the river on the North side of the English Bank, passing Lobos on either side, according to the wind and state of the weather. There is a good passage between Lobos and the main, having 17 to 14 fathoms of water.

The island of Lobos is in lat. 35° 1′ S., lon. 1° 24′ E. of the Mount Video. It bears about *S.W., true*, from Cape St. Mary, distance, 41 miles. The variation off it was 13° easterly in 1813.

When within 3 *or* 4 *leagues of Cape St. Mary*, in 17 or 18 fathoms, S.S.W. by compass, is a fair course to steer for passing outside of Lobos in the night time, for with the wind from the eastward, or N.E., the set along shore into the river must be guarded against. Steering this S.S.W. course the depth of water will increase to 20 and 22, and some casts perhaps of 25 or 27 fathoms (if you are set neither to the westward nor to the southward of it), and the bottom will change, first to sandy mud, and then to dark blue mud, as you approach the latitude of Lobos. If you are set to the southward in steering S.S.W., you will not deepen so much; the bottom will keep sandy, and when you approach the latitude of Lobos you will have no more than 19, 18, and 17 fathoms; but if you are set to the southward of Lobos a few miles you will have hard casts of from 16 to 10 fathoms, and may rest assured of being on the parallel of the English Bank, and may therefore make a west-northerly course *true*, till you find the bottom soften, as it is all dark blue or greenish mud in the channel between the foul ridge of the English Bank and the North shore, all the way up to Monte Video, in the fairway from Lobos. When off Lobos, if the weather threaten, and it should be likely to blow, a ship will find safe anchorage in the harbour of Maldonado, sheltered from southerly winds by the island of Gorriti, which bears N. 42° W., *true*, 11 or 12 miles from Lobos.

---

* The *Laurel's shoal*, in lat 36° 28′, lon. 51° 30′, or about 70 leagues from the mouth of the Plata, has been reported as a sandy bank, with heavy breakers, seen in 1822.

LOBOS to FLORES, &c.—Having Lobos bearing N. by W. by compass, distance 3 or 4 miles, you will have about 18 fathoms; and in making a compass course, W. ½ S. by ground log (having due regard to the wind and current at the time), you will make the Island of Flores ahead of you. In this track your soundings will gradually decrease from 18 to 12 fathoms due South of Black Point, and to 7 or 8 fathoms when you approach within 9 or 10 miles of Flores.

Though Captain Bouverie says, "You may run quite up to Monte Video, either by night or day, by making a due West course, first trying the current to make allowance for it," and though I have frequently done it myself, yet I would not recommend it as a general rule to be followed by strangers to the River Plata. Great care and attention to the course made good, and to the soundings, are indispensably requisite in those who attempt to conduct vessels during the night in any part of this river, and even these have been but too often insufficient to save ships from destruction. But in merchant vessels I fear we cannot always expect to find those qualities, and therefore I withhold my opinion of its being advisable for them to run in the night; neither can it be done by men-of-war without some risk.

FLORES bears, by the world, W. 4° 30′ N. from Lobos, distant 52 miles. It lies nearly N.E. and S.W., has a small hummock in the middle, and one at each end, that to the S.W. being 39 feet high. Between these the land is low and marshy, and overflowed sometimes between the central and N.E. hummock. It may be seen at the distance of 5 or 6 leagues from a ship's deck in clear weather.*

There is good anchorage all round this island, but a reef extends in a N.W. direction from the North point about a mile. Seals and sea lions, and various aquatic birds, resort to this small island as well as to Lobos, and in the months of August and September great quantities of very excellent eggs may be procured. With the wind easterly, boats may land on the western side of Flores, particularly in a small cove, very near the S.W. part of the island.

ENGLISH BANK.—From Flores, W.N.W., the *Carretas Rocks* (above water) are distant about 5 miles, and there are 5 fathoms between them. True South, at the distance of 11 miles from Flores, is the North part of the English Bank; on which, in that latitude, 35° 8′ S., there is about 12 feet of water. The depth of water between Flores and the English Bank is 7 fathoms all the way across, to within a very little distance of both. The English Bank, in lat. 35° 12′, generally breaks; and, with a low river, is above water in some places. Its extent to the southward has not yet been accurately defined; and for 70 or 80 miles to the south-eastward of it the ground is said to be foul and uneven, and has not been sufficiently explored.

Between the Archimedes and the English Bank there is a swatch of 5 fathoms of water (according to Captain Beaufort, of the Royal Navy, who explored these banks in 1807), and as many miles wide.

The shoalest part of the Archimedes Bank, about 2¾ fathoms, is 4 miles in extent, about North and South by compass; and there are 4 fathoms all round it. The centre of it is in lat. 35° 12′ S., and the Mount Video bears N. 22° W., by the world, from it, distance 20 miles. Beside this bank there is a small knoll, in lat. 35° 14′ S., which is true South from the Mount Video, 21 miles; and has not more than 3¼ fathoms of water on it, and about 4 fathoms all round it.

MONTE VIDEO.—Passing to the southward of Flores, at the distance of a couple of will raise the land (if the weather be clear) about Point del Indio to the eye at the mast-head; and probably you will not have more than 3¼, or, at best, 3½ fathoms. The mount and land near Point del Indio are sometimes visible at the same time.

---

* The lighthouse on Flores has already been noticed.

Point del Indio is in lat. about 35° 16′ South, and 0° 56′ West of the Mount Video, from which it bears S. 63° W. by the world, distant 50 miles. There is little more than 3 fathoms at the distance of 10 or 11 miles, when the river is in a mean state; farther to the southward, and off Point Piedras, there is only that depth 14 or 15 miles off shore. Very great caution, therefore, is required in approaching it; and a constant lookout should be kept for the land, as it is very low, and cannot be seen farther than 12 or 13 miles, in any weather, from the deck of a frigate.

When the land is barely raised to an eye 19 or 20 feet above the surface of the water, a W.N.W. magnetic course will lead along shore, between it and the South part of the Ortiz, which is distant about 14 miles from it; and between them there is nowhere more water than 3½, but mostly 3¼ fathoms. With a high river, I have had a quarter less 4 fathoms. The nearer the Ortiz the deeper the water.

In steering up W.N.W., with the land seen from the deck (if clear weather), you will have 3½ or 3¼ fathoms (yet if the river is low, perhaps some casts of 3 fathoms), and raise a remarkable clump of trees, called *Embudo*,[*] which are much taller than the rest, highest at the West end, and lie in lat. 35° 6′ South, and in lon. 1° 16′ 30″ West of the Mount Video, or 0° 57′ 30″ East of the cathedral of Buenos Ayres. At some distance to the westward of the Embudo trees there is another clump, about the same height; but these, being highest at the East end, are sufficiently distinguished not to be mistaken for the true Embudo.

When in 3½ or 3¼ fathoms, the Embudo trees bear by compass W.S.W.; the S.E. end of the Chico Bank will bear W.N.W., or thereabout, 10 or 11 miles from you; and you must now determine from the water your ship draws, and the then direction of the wind and state of the weather, whether you will pass between the Chico and the shore, or between the Ortiz and the Chico. I have passed up and down several times between the Chico and the South shore in the *Nereus*, lightened in her draught to 18 feet 3 inches; but I would never attempt it again from choice, now I am better acquainted with the middle channel between the Chico and the Ortiz, and have every reason to believe that the middle ground,[†] some charts lay down in it, does not exist.

A ship not drawing more than 15 feet may take either passage; and, of the two, ought perhaps to prefer that to the southward of the Chico Bank, particularly if the wind should be well to the southward, as she might take her soundings from the weather shore, and, keeping in somewhat more than her own draught, run up along it; and, by not deepening above 3 fathoms, would ensure being to the southward of the Chico.

Chico Bank, &c.—The S.E. end of the Chico Bank bears from the Embudo trees N. 32° E., *true*, distant 10 miles, and E. 9° N. 13 miles from Atalaya church. Its latitude there is 34° 56′ 30″ South, and lon. 1° 9′ West of the Mount Video. This bank runs in the direction of N. 53° W., *true*, or N. 65° W., by compass, about 13 miles to its N.W. end, which is in lat. 34° 48′ 50″ South, and 0° 47′ East of Buenos Ayres cathedral. From this N.W. end, in 14 feet water, Atalaya church bears S. 14° W., distant 11 miles; and Point Santiago, forming the Ensenada de Barragan, bears W. 4° N., 14 miles from it. The breadth of the Chico does not exceed 2 miles, or perhaps 1½ miles, and its inner edge is about 9 miles from the shore. The water between it and the shore is nowhere more than 3½ fathoms, and the deepest water is along the inner edge of the shoal, at the distance of half a mile from it, or less in some places. About midway between it and the shore there is a quarter less 3 fathoms. On some parts of the Chico there is very little water, and within the limits I have assigned to it nowhere more than 14 feet.

To ships drawing less than 15 feet it is only further necessary to recommend care and attention on approaching *Point St. Iago*, which forms bushy and distinct; and, when it is brought to bear to the south-westward, haul out into the stream of 3½ fathoms, to round outside the Spit, which runs about N.W. by compass from Point St. Iago, at least 10 or 11 miles; its extreme point, in 2 fathoms, being about 5 miles from the shore. When two remarkable trees on Point Lara are brought to bear S. by E. ½ E., or S.S.E. by compass, you are past the Spit. This mark will also lead a ship of that draught of water clear to the westward of the Spit, in running in towards the Ensenada.

---

[*] The *ombu* trees mentioned by M. Barral.

[†] The existence of a middle ground has, however, been lately proved by the officers of H.M.S. *Pearl*, who surveyed this bank lying between the tail of the Ortiz Bank and Point Indio; see *Naut. Mag.*, January, 1844. It is not improbable that this bank may have grown up, and thus escaped the notice of former navigators, as there are several shoals existing in different parts of the estuary which are of comparatively recent formation: but see hereafter some observations upon this.

After passing the spit off Point St. Iago, in 3½ fathoms, a W. by N. northerly course by compass will lead up to the outer road of Buenos Ayres, where any ship may safely anchor in the water she draws, if the river be low.

Frigates, or any vessels drawing more than 16 *feet of water*, should barely raise the land about Point del Indio to the eye on deck, and borrow nearest the Ortiz: more particularly when the Embudo trees are brought to bear as far as S.W. by W. (magnetic); for, with the Embudo bearing from S.W. to S.S.W., the bottom is flat, off to 3 fathoms, full 7 miles from the shore, and chiefly hard clay. Therefore when the Embudo trees bear W.S.W. by compass, and you are about 9 or 10 miles off shore, in 3¼ fathoms, if you have a leading wind haul to the N.W. by W., or more northerly, as may be required to clear the S.E. tail of the Chico, and you will soon deepen your water to 4 fathoms, and more, in the middle channel, between the Chico and the Ortiz Shoal. The fair course through, between them, is about N.W. by W. ½ W. (magnetic), and in mid-channel the land can but just be distinguished from the quarter-deck of a frigate. When the Embudo trees bear S. 20° W. by compass you will be abreast of the S.E. end of the Chico, and may either take your shoal soundings along its northern or outer edge, to about a quarter less four, if the wind is southerly; or, if the wind be northerly or easterly, borrow into a convenient depth along the southern edge of the Ortiz. I believe the breadth of this middle channel may be 5 or 6 miles, and the depth of water from 4 to 5½ and even 6 fathoms in the fairway, about the N.W. part of it, and abreast that end of the Chico. The quality of the ground all the way through this channel is generally soft mud, and fit for safe anchorage.

BUENOS AYRES.—The N.W. pitch of the Chico Bank being passed, and the depth of water 5 or 5½ fathoms, you may steer by compass W. by N. ½ N., or W.N., for BUENOS AYRES, taking care not to shoalen under quarter less four, off the Ensenada de Barragan, till *Point Lara trees* bear S.S.E.

At a little more than halfway from Point Lara towards Buenos Ayres, in the *Nereus*, in 19 feet of water, and the bottom soft mud, these trees bore, by compass, S. 17° E.; the cathedral, S. 67° W., and the spire of the Recoleta convent, S. 76° W.: the latitude observed was 34° 34′ 30″ South, and the longitude, by the moon, 58° 2′ West of Greenwich.[*] Variation of the compass, 12½° easterly, at a distance of 8 miles from the cathedral.

Nereus, Buenos Ayres, July, 1813. P. HEYWOOD.

OBSERVATIONS ON THE ANCHORAGE OFF BUENOS AYRES, BY MR. R. THOMSON, M. H.M.S. IMOGENE.[†]

On the 22nd Oct., 1836, we left Monte Video for Buenos Ayres, with a pilot on board. At Monte Video moorings are laid down for the pilot schooner, which lies with Point Indio bearing S.W. by S., by compass, 10 or 11 miles; and she generally keeps a light at her mast-head. This is a good guide for vessels passing up, enabling them to shape a course between the Chico and Ortiz banks: or in passing down the river it enables them to shape a course clear of the East end of the Ortiz, or for clearing the English Bank. In fact, if the vessel can be made, she will always give a new departure, a most desirable object in this uncertain river. On leaving Monte Video, and bound to Buenos Ayres, if the pilot schooner be not seen where and when the pilot expects to see her, there cannot be a doubt of her having left her moorings, or that the vessel is not in a proper place. At the time we expected to see her (which was midnight, and we burnt several blue lights, as well as fired several guns, in order to draw their attention), she was at Buenos Ayres.

Having missed the vessel, or being unable to find her, I would strongly recommend anchoring until daylight, and taking a departure from Point Indio, or the Embudo trees, all well described in the sailing directions for that place.

---

[*] We now make it 58° 10′ W.

[†] Nautical Magazine, April, 1838.

On the 23rd we anchored off Buenos Ayres, with the cathedral bearing S.W. by W., Point Guilmas, S. by E. ½ E., about 7 miles from the shore, and on the 25th shifted our berth nearer the shore 2 miles, and moored with best bower E.S.E., small bower W.N.W., 50 fathoms each, Buenos Ayres mill bearing S.W. ½ S.; this is a better anchorage than where we left, as there is generally 4, and sometimes 6 feet more water, and it is full 2 miles nearer the shore.

I cannot say much in favour of the anchorage here, as it is open to all points of the compass, and at a great distance from the shore; in fact, the communication with the shore is at all times very uncertain, and we are frequently three days without sending a boat; even when they are sent there is a great uncertainty attending their return for a day or two. While we lay there (eight weeks) we found the mooring swivel of great use; it was well tried during the heavy gales we rode out. The prevailing winds were East and N.E. The tides are very irregular, but at times running as much as 3½ miles an hour. We have had from 19 to 25 feet water.

The outer and inner roads are, in fact, open roadsteads, neither of them possessing good anchorage. A strong wind from East or S.E., blowing almost direct on land, is dangerous to those in the inner roads, and they frequently drive.

It is said that the winter season is much better for shipping than the summer, as in the latter the winds are more from the eastward. Good anchors and cables are very necessary in the River Plate, chain cables particularly.

In addition to the difficulty of large vessels getting up the river, an adequate freight cannot be procured for them; but vessels of 150 to 200 tons are the most likely to get employed.

Vessels discharge and take in their cargoes by means of lighters, called balandras. Should there be the least swell upon the water, these lighters cannot lie alongside. Boat hire is dear; to the outer roads 25s. English.

The climate, considered generally, is decidedly good. The spring months of September, October, November, and those of autumn, April and May, are the most agreeable parts of the year. December and January are said to be the hottest months in the year. During the former we have had some days of oppressive heat, the thermometer ranging from 69° to 85° in the shade. When the heat is at the greatest a pampero frequently follows, with its accompaniments of rain, thunder, and lightning. These winds from the West to S.W. blow with great violence; being off the land they are not very dangerous to shipping, but the thunder and lightning by which they are accompanied is terrific. A North wind in summer is very unpleasant, the heated atmospehre relaxing both the mind and the body; added to this ships are swarmed with musquitoes and numerous other insects.

The beach of Buenos Ayres well deserves its nickname of Wapping, being crowded with sailors of all nations, grog shops, stores, &c. In no part of the world are masters of merchant vessels subject to such annoyance from the desertion of their crews. There are crimps here who conceal them in the town, or send them to the country, and afterwards exact their own price from those who are in want of sailors.

The necessaries of life are abundant, and reasonable in price. The beef is good, but much inferior to English. Vegetables are at all times dear; potatoes imported pay a duty of 50 per cent., and the growth of this invaluable vegetable is not in any way encouraged; I have known them sell at 8d. per lb. In summer, meat will not keep beyond a day. We have been obliged to throw overboard some hundred pounds of beef, slaughtered not more than twelve hours. The poultry is not of the best description. Fish is very inferior, but plenty may be caught alongside. We had no opportunity of trying the seine.

Fuel is scarce in Buenos Ayres, as it is not a woody country. Coals are imported from England.

The exports consist of ox hides of all descriptions, horse hides, horse hair, wool, tallow, nutkia skins, horns, chinchilla skins, and salted beef (the latter sent chiefly to the Havana and Brasils), and a small quantity of silver in bars. The quantity of European goods annually imported is very great. The cargoes brought from Liverpool, of manufactured goods of Manchester, Glasgow, &c., are of considerable value, often amounting to £100,000.

The state of the tides sometimes causes great delay to vessels leaving the inner roads; days, and even a week being lost at some periods.

Landing at Buenos Ayres is very bad; heavy boats cannot get near. Carts with enormous wheels are used to embark and disembark, there being seldom water sufficient to go close in; and they are at all times liable to serious damage from the pieces of rock, wrecks, &c., near the shore. The cartmen charge one dollar each trip.

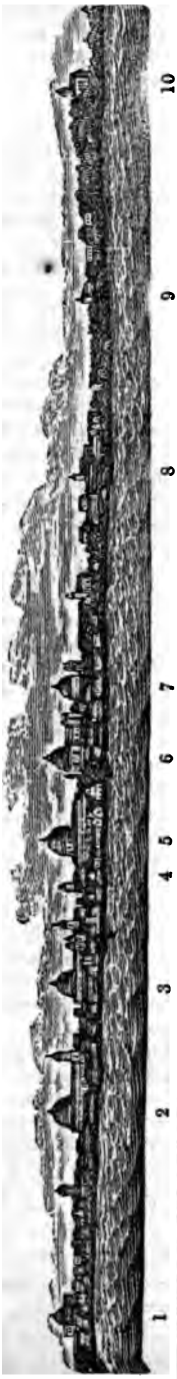
DESCRIPTION OF BUENOS AYRES.—BUENOS AYRES derives its name from its healthy climate. Its port is so shallow that, as shown by Captain Heywood, large vessels anchor at 8 miles to the eastward, near the spot from which the annexed view was taken. Here they discharge their cargoes into lighters, or small craft, which reach the town by the channel formed by the sands, the depths in which are from 13 to 12, 10, and 8 feet. The entrance of this channel is 2 leagues West [*W.N.W.* ¾ *W.*] from the Nereus' or outer anchorage, and here vessels anchor in from 14 to 16 feet. To pass hence into the *Inner Road*, which is a mile North from the city, and 3 miles farther in, they round the sand on the larboard side, and in not less than 10, 12, and 14 feet of water. In this road the depths are from 9 to 13 feet, and this depth continues more than a mile farther to the southward, where the channel, formed by the bank, is a mile in breadth.

The city at a distance has a stately aspect; its situation is agreeable, but the houses in general are very low, having no more than a ground floor, with large court-yards, and mostly with a garden. The citadel, which includes the governor's palace, is upon the shore of the river, and forms one of the sides of the great square, opposite to which the town hall is situated; the cathedral and episcopal palace occupy the other two sides of the square, in which a public market is held daily. The flat on which the city stands is only from 15 to 20 feet above the level of the water. The city is regularly built, has several handsome squares, with streets straight and broad, having footpaths on each side, but unpaved in the middle, and so soft that in rainy weather they are frequently impassable from ponds of mud. The environs are well cultivated; most of the inhabitants have their *quintas*, or country seats, and market gardens furnish the necessaries of life in abundance.

The atmosphere around Buenos Ayres is so moist that the floors of the rooms exposed to the South are always damp. Walls having the same aspect are covered with moss, and the roofs with grass. This humidity is not, however, prejudicial to health.

In the *quintas* are raised all kinds of fruit and vegetables, among which peaches are remarkably abundant. Melons and water melons are also abundant and cheap. Other fruits are grapes, apples, pears, figs, nectarines, pomegranates, quinces, apricots, oranges, and lemons. The common vegetables of Europe, potatoes excepted, are sold in the market, but are not cheap, as labour is dear. The chief exports are hides and tallow. The imports, manufactured goods.

Of the inhabitants, the ladies are more particularly to be noticed. The majority are brunettes, elegant in person and manners. There is nothing like vulgarity in the appearance of the poorest woman among them. All the men, in tolerable circumstances, now dress in the English fashion, and in English manufactures; but others slightly in the Indian mode. Both males and females have, in general, excellent capacities, but they have been little improved by education, from want of schools and liberal establishments; it has, however, been noticed by a traveller, to whom we are indebted for these



VIEW OF BUENOS AYRES, FROM THE NEREUS ANCHORAGE IN THE OUTER ROAD.

REFERENCES.—1, *Residencia.*—2, *S. Domingo.*—3, *S. Francisco.*—4, *Cabildo.*—5, *Cathedral.*—6. *S. Miguel and Mole Head.*—7, *S. Merced.*—8, *Santa Catalina.*—9, *Socorro Chapel.*—10, *Recoleta Spire.*

remarks, that in spite of all obstacles, many young creoles may be found who have improved themselves amazingly within a few years.

DIRECTIONS BY CAPTAIN CHIRON DU BROSSAY, OF THE FRENCH MARINE.*

The best position to be in for making the entrance of the River de la Plata is to look for soundings in 90 or 100 fathoms, on the parallel of Lobos, and nearly 52° 25′ W. lon. From thence run to the West, inclining a little to the South, so as to find soundings in 18 and 20 fathoms, fine sand, at 10 leagues South of Cape Sta. Maria, taking throughout care to estimate the force of the currents from the direction and force of the winds. You cannot be too guarded in this respect against those occasioned by the winds from S.E., which run toward the coast with great violence. You have less to fear from those from other quarters, which will carry you from off the coast.

The quality of the bottom will be a sufficient indication of the effect of the current on the route followed. If it has carried you South the depth diminishes slowly, and the bottom will be of fine sand; if, on the contrary, it has carried you North, the water will have decreased rapidly, and the bottom will have been sand and broken shells. Near to Cape Sta. Maria it will be sand mixed with gravel. If the depth diminishes progressively, and the bottom should be of muddy sand, you will have kept on the parallel of Lobos. The farther you enter the river the bottom will be more muddy.

Many navigators have advised vessels destined for La Plata to make the Castillos Grandes, but I do not agree with this; the coast is dangerous and difficult to clear if you are taken with a gale at S.E. You ought to leave nothing to chance in entering the river, but certainly not to hesitate about getting sooner or later into the latitude of Lobos, which is the best landfall.

If, notwithstanding all precautions, you find yourself horsed to North more than you supposed, and in 18 fathoms, sand with gravel or shells, you make the land, it will be the Castillos, and you must then bear away quickly to find the muddy bottom to the South of Cape Sta. Maria, when the lead will clearly show your position. Near the land it will be 11 fathoms, sand; some miles South, 18 fathoms, mud; and farther outwards you will find a larger quantity of sand. In 20 fathoms sand, you will be 10 leagues off.

Leaving this depth you will steer less South, so as again to get the muddy bottom, and pass 10 miles South of Lobos. If, in all the track, the soundings should give very different results, it need not occasion surprise; the bottom throughout is unequal, and the lead may fall into one of those holes, called here *posos*, wells.

Nearing the meridian of Lobos the bottom is of black soft mud, in 14 and 18 fathoms, according to the distance. At 10 miles South it is muddy sand; a little farther off, of sand, and the depth diminishes rapidly as you drift onward. Leaving the English Bank you will most likely meet with soundings of 9 and 11 fathoms, very uneven bottom, sand and gravel, you will then be on the flat, the summit of which is 14 miles South of Lobos. The charts do not show it.

Arrived at Lobos, you must estimate your drift by the ground log, keeping a man sounding on the starboard, and another on the port side, and so regulate your sailing as to have your depths and quality of bottom with all possible exactness.

Vessels of any size can pass North or South of Lobos; but, except under particular circumstances, they ought never to go to North. Leaving Lobos in 18 fathoms, to pass to the South of Flores, you steer so as to keep in muddy bottom, and from time to time come to port to pick up the muddy sand on the South edge of the channel. By this means you will be sure to keep in a good direction, the depth lessening from 18 to 6 fathoms. In 12 fathoms you will be on the meridian of Punta Negra. Before arriving in 6 fathoms you will have seen Flores Isle, and, if by night, the revolving light on it. You ought to take into the account the effect of the current, and also remark the quality of the bottom. In the channel it is mud, and the bottom of soft mud is a certain sign of being away from the English Bank. When you have made Flores, or its light, it is very easy to take the passage between it and the English Bank.

The direction to follow from Flores to Monte Video depends on the current, and the distance from Flores. You must keep a good distance off the rocks which surround

---

* Instructions Nautiques, par M. Chiron du Brossay, Capitaine de corvette. Ann. Marit. et Colon. Feb. 1845.

Point Brava, by not coming into less than 4½ fathoms. Either by night or day a bearing of the isle or light of Flores will assure you of the direction of the current, which is frequently violent. When you bring the Cerro of Monte Video to bear N.W., then anchor.

Vessels frequently prefer to pass to the South of the English Bank. Afer having made Lobos, steer upon the great bay of San Borombon; in this route guard against the French Bank. You will cut the ridge of sand on the parallel of the English Bank, the nature of the bottom and the depth will tell you its situation.

As soon as you find the muddy bottom of the Bay of San Borombon, you must steer to make the shoals off Point Piedras, passing to the South of the English Bank, and also of those of the Medusa and Narcissus, which are little known.

From Point Piedras you must bear up for that part of the river whither you are bound. If it is to Monte Video, you should go to the shoals of Point Piedras, and run for the port when you have 5½ fathoms, muddy bottom. You should make sufficient allowance, in case the downward current should horse you on to the Archimedes Bank. This may be avoided by the lead, the bottom becoming of muddy sand and mud; you should not go in less than 4½ fathoms. As soon as you make the Cerro, you will then know how to proceed.

If you are bound for Buenos Ayres, you make the soundings off Point Piedras in 15 to 20 feet, bottom of soft-stones and rocks; you then run towards Point Indio, keeping on the edge of the soft stone bank, in 16 to 17 feet water.

MONTE VIDEO to BUENOS AYRES, by the MIDDLE CHANNEL.—The following directions are by *Don Benito Aizpurua*, a pilot, with additional remarks by *Captain Ch. du Brossay.*

Leaving Monte Video, steer S.W. 30 miles; then W.S.W., so as to make Point Indio. Being in 18 or 20 feet water, in sight of Point Indio, steer to the N.W. by W. so as to make the Ortiz Bank without fear, for the depth diminishes gradually. From 18 to 20 feet off Point Indio, with the head to the N.W., the depth increases to 25 and 27 feet; and when it falls to 16 you are on the Ortiz. Then from this steer West so as to make the Ensenada de Barragan, which is remarkable by the two points of Santiago and Lara. The first is known by an extensive wood, and the latter by the great ombu tree near it.

From 16 feet on the Ortiz the depth increases regularly on the route to 30 and 35 feet, according to the state of the river. The depth of 33 indicates the neighbourhood of the Ensenada, observing that, when you can see this, the North coast or Colonia may be seen. Having passed the Ensenada you will see the village of Quilines on a high hill, which you may know by a mass of ombus, and before this you will have seen the towers of Buenos Ayres. In case there are no vessels at the outer road, you cast anchor, when the church of the Residencia, the southernmost in the city, bears S.W. 6 or 7 miles.

Before losing sight of the Cerro of Monte Video you ought to ascertain, by a bearing, the direction of the current, so as to make proper allowance for it. If, during your run of 30 miles to the S.W., you have less than 18 feet, you are horsed on to the S.E. point of the Ortiz, of which I could cite numerous examples. If, on the contrary, the lead gives more than 24 or 25 feet, you are drawn into the channel to the South of the English Bank.

In the run of 15 miles to the W.S.W., you will not find less than 17 feet water. If you find more than 20 feet, and the nature of the bottom shows that you are abreast of Point Piedras, you must round for some miles the bank of rotten stone on the coast, and take the position indicated in Aizpurua's instructions above, before running to the N.W. If on this N.W. route the current bears upon the Nuevo Bank, the depth will lessen a little, and the bottom of mud will become of sand. You will know by your distance that you are on the Nuevo and not on the Ortiz Bank. You must then place the head West, until you have doubled the N.W. end of this; then again come up N.W. to make the Ortiz; the diminished depth and the hardness of the bottom will show its edges.

It may be that, instead of the Nuevo, you may be carried on to the Chico Bank, which you may know by the uniformity of the depths, which do not exceed 19 or 20 feet. You must then steer to the North, so as to find the depths of 28 to 30 feet in the middle channel. If you think that you are very near to the Chico Bank, you must bear eastward in your route. When you have again found depths of 28 to 30 feet, you may then bear to N.W., as before, and from the edge of the Ortiz proceed direct to Buenos Ayres.

in consequence of the violence of the squalls. At the commencement of this bad weather the squalls were harder and more frequent than toward its termination, and were accompanied with rain, hail, and sleet. Toward the close of it the general strength of the wind was increased, but the violence of the squalls was comparatively moderate, and the intervals longer. Still these gusts of wind gave no warning, and, indeed, during the whole period, excepting in the squalls, there was a clear blue sky, and apparently fine weather. From the commencement of these pamperos to their termination we had a reduction of nineteen degrees in the temperature of the air, and of fifteen in the surface of the sea. The remarks of Captain Heywood will be found very useful in anticipating these squalls.

"To these pamperos succeeded a calm; then light and moderate breezes from N.W., E.N.E., North, E.N.E., S.W., S E., with cloudy weather, until in lat. 48° S., lon. 54° W., when we fell in with a W.N.W. wind, which the next day carried us into the soundings off the Falkland Islands."*

To the preceding we may, with propriety, add:—

The Passage of H.M.S. Conway, Captain Basil Hall, from Rio Janeiro to Buenos Ayres, in October, 1820.

This passage was made in less time than it usually occupies. We passed the *Sugar-loaf* at the entrance of Rio, about 4^h p.m., Saturday, the 14th of October, 1820, and were off *Maldonado* at the same hour on that day week, viz., the 21st, and anchored off Buenos Ayres, at 4^h a.m., Monday, the 23rd; thus completing seven days from Rio to the Plata, and eight and a half from Rio to Buenos Ayres.

The wind was moderate from E.S.E. as far as lat. 26° 46′ S., when it drew to N.E., and blew fresh; it then hauled gradually to the northward. In 33° it fell light, and drew to the westward, South, and so round to the eastward. On approaching the river it came to the southward again; after entering which the wind came from the S.E., and afterward N.E. and East, moderate and fine weather.

An American frigate which sailed from Rio a fortnight before us met with hard S.W. breezes, and arrived only 2 days before us.†

Two years afterward, the *Conway*, then returning to Rio, was off the Plata, between lat. 40° and lat. 30° S. for thirteen days, contending against northerly and N.N.-westerly winds, between lon. 40° and lon. 50. This was the latter end of August and beginning of September, 1822; and it may be useful to remark that, on this occasion, the winds invariably followed the course of the sun; that is, from right to left, or what is technically called, in the northern hemisphere, against the sun. This change occurred three different times; the wind drawing from N.E. to North, then to N.W. and West, and so to S.W., and again by S.E. to N.E. and North. Upon two occasions it shifted to S.W. from the northward, without any warning, and blew fresh.

---

* It has been stated that sometimes such swarms of flies are blown off the coast, about the entrance of the Rio Plata, as to resemble a small dense black cloud, which is invariably followed by a *pampero*.

In the eastern seas swarms of large flies sometimes come on board vessels, and a typhoon is sure to follow. An eye-witness said, "There were three Indiamen of us in company; typhoon flies flew on board our ship, the weather was very fine, and no appearance of a gale, and all of us were surprised when our old experienced captain immediately set us to work to send down royals, top-gallant masts, &c., which we had scarcely accomplished when a tremendous hurricane came on. We were obliged to keep the ship right before it for a long time. When it came on our commander was on the forecastle, giving some orders, and the force of the wind was such that he was unable to return to the quarter-deck for about four hours.

"The other ships suffered severely, losing topmasts, &c, but we escaped, owing to the experience of our captain, and his prudent measures, which commenced as soon as ever the flies were noticed."

"Mr. Luccock says, In the lat. of 34° S., and fully 200 miles from land, we found the rigging covered one morning with a multitude of small insects; some of them very beautiful. We had no doubt of their being brought from the land by a N.W. wind, which then began to blow fresh, but wondered at the distance to which they had been wafted. They were the precursors of one of the most durable gales which I ever experienced; it lasted ten days with more or less violence, during which we drifted to 36½° South.—*Luccock's Brasil.*

† The *Conway* crossed the parallel of 30° S. in about 47° 40′ W.—Ed.

ROUTES FOR RETURNING FROM BRASIL TO EUROPE.

As the *land breezes* of Brasil are nearly the same along the whole of the coast, and during the greater part of the year, the day and hour of departure may be always fixed. It has been noticed that these breezes rise during the night, and are generally very fresh during the early part of the day; as they continue for nine and ten hours, you have, consequently, every advantage for preparation, and for standing off to a distance from the coast, free from all local obstacles.

The Baron Roussin has treated rather copiously on the routes to be adopted in sailing from the different ports; but his rules appear to be such as will naturally suggest themselves to the mind of a seaman, on a consideration of the prevalent winds, currents, &c.

The strength of the N.E. winds often force vessels, when bound from ports *South of Cape Frio*, on their return to Europe, to keep close on the larboard tack for 12 or 15 days, and descend to the S.E. or S.S.E. to the parallel of 28°, or even of 32°.[*] In advancing from the southward you ought to attain the meridian of, and sight the island of Trinidad, in 20° 31′ S. and 29° 19′ W.; then tack about and leave the island on the starboard side, as you cannot always double the projecting points on the eastern shore. On proceeding hence, northward, the winds will be found nearly approaching East and S.E., and so facilitate the proper route. By acting in this way it will rarely happen that you cannot pass to windward of the Isle Fernando Noronha, and cross the Line between the 28th and 36th degrees of longitude (West of Greenwich), or, if circumstances require it, 1 or 2 degrees more to the West.

On *quitting Pernambuco*, or the points in its vicinity, you may not always be able to get to the northward on the starboard tack. The direction of this coast inclines from the North to the West, and the winds are mostly from the eastward; but, at the same time, you may gain a good offing in directing your course to the northward. Should, however, the winds not permit you to proceed freely on this route, it will be preferable to make a long board to the S.E., and then act according to circumstances.

Between POINT TOIRO (*the N.E. extremity of Brasil*) and the Isle of *Maranham* the general direction of the coast is W.N.W., and there is no difficulty in proceeding along it with the prevailing winds. During five sixths of the year these winds blow from E.S.E. to E N.E., and it is easy to go to the North, and even to gain a little to the East, by governing the starboard tacks.

In quitting the port of Maranham, and proceeding thence northward, a favourable wind is required, and care must be taken to avoid the dangerous shoal of *Manoel Luis*, before described. By anchoring for thirty hours near the edge of this shoal, it was found that the tide sets regularly six hours each way, the flood to the S.W., and the ebb to the N.E., nearly with the same strength. The rise and fall was 12 feet. These remarks have been confirmed by others made by Lieut. Lartigue, in a vessel called the *Lyonnaise*, in 1826, who found the alternate streams to run at the rate of 1 mile an hour.

The combination of tide and current hereabout renders it necessary to be very circumspect when entering and leaving the Bay of S. Marcos, or in sailing between it and the shoal of Manoel Luis, as the streams may be very variable.

---

[*] RIO JANEIRO to CAPE FRIO, &c.—Mr. Wood says, between the months of September and March, when the northerly winds prevail, as well as a current to the southward, it is advisable, after doubling Cape Frio, to stand to the eastward into the tracks of the Indiamen, endeavouring if possible to keep within the tropic; as it is of little use to go round, unless you can weather the land on the other tack, as the wind always heads you as you draw inshore, besides a current on your weather bow.

The *Tartar* was (by observation daily) affected by the *equatorial current*, between lat 0° 8′ N. and lat. 4° 53′ N. (lon. 24° 30° W.) in a period of three days, 87 miles N. 44° 27′ W. *true*; equal to 22 miles per day. *Nov.*, 1825.

IX.—THE COASTS OF LA PLATA AND PATAGONIA, FROM THE RIVER OF LA PLATA TO THE STRAIT OF MAGALHAEN.

THE COAST of the PAMPAS, or Plains of BUENOS AYRES, extends from the River Plata to the *Rio Negro*, or *Black River*, represented in lat. 40° 55′. It is entirely flat, and destitute of harbours. The interior is one vast plain, mostly covered with grass and clover, the food of millions of horned cattle and wild horses. The maritime part next the sea has been called, by the Spaniards, *El Pay del Diablo*, or the Devil's Country; yet the coast may be approached with safety, as the soundings are regular.

PATAGONIA extends from the Rio Negro to the Strait of Magalhaens, and is divided into Eastern and Western Patagonia by the Cordillera of the Andes.

TIERRA DEL FUEGO takes in all the islands southward of the Strait of Magalhaens (including Staten Land), as far as the Diego Ramirez Islets.

The country inhabited by the Patagonians is open, and, generally speaking, rather level, with occasional hills, and some extensive ranges of level topped heights (steppes). There are very few trees, and water is scarce. The eye wanders over an apparently boundless extent of parched, yellow looking, semi-desert, where rain seldom falls, and the sky is almost always clear. During a few days in each year, or perhaps at intervals of two or three years, the rain pours down in torrents. The heats of summer are very great; but in winter, though the days are not cold, the frosts at night are severe; and at all times of the year, in the day time, strong winds sweep over the plains.

On the coast of the Indian country, and Patagonia, to the southward, there is not a single place of trade. The whole is occupied by various nomadic or wandering tribes, and the southern part is under a cold and cheerless climate. The latter was discovered in 1519 by Fernando Magalhaens, generally called Magallan, and who first passed through the strait which bears his name.

The inhabitants of the country to the South of the Pampas, under their hereditary *Ulmens*, or *Caciques*, live in *duars*, or villages of tents, and rove about in the manner of the Arabs. They sometimes choose an *Apo*, or commander-in-chief, and thus become more formidable. Their dress is adapted to the climate; and they have furs to spare, which they occasionally exchange for tobacco, spirits, and other articles of luxury. When a camp or village is raised, for the sake of superior pasture or convenience, the whole is mounted on horseback; and this toil, with that of the domestic economy, falls exclusively on the women, who are harshly and cruelly treated.

The different tribes are commonly in a state of hostility, and their contests are dreadful. The desire of revenge passes from generation to generation. Victories are celebrated with dancing, singing, and drinking; and the victors are adorned with plumes and other ornaments. The people are commonly tall, well made, of a copper or bronze colour, and are very expert in the chase, in the use of the lance, and of the bow. To them, however, religion and pious feeling appear to be totally unknown.

Commodore Byron and others have described the natives of Patagonia as a gigantic race; but later navigators do not accord in that description, and say, on the contrary, that the Patagonians, generally, are not higher in stature than the other Indian tribes.

But *Captain FitzRoy*, in his description of this coast, has said that the aborigines are a tall and extremely stout race of men. Their bodies are bulky; their heads and features large, but their hands and feet are small. Their limbs are neither so muscular nor so large boned as their height and apparent bulk would induce one to suppose; they are rounder and smoother than those of white men. Their colour is a rich reddish brown, rather darker than that of copper, yet not so dark as good mahogany.

Nothing is worn upon the head except their rough, lank, and coarse black hair, which is tied above the temples by a fillet of platted or twisted sinews. A large mantle, made of skins, sewed together, loosely gathered about them, hanging from the shoulders to the ancles, adds so much to the bulkiness of their appearance, that one ought not to wonder at their having been called gigantic. Among 200 or 300 natives of Patagonia, scarcely half a dozen men are seen whose height is under 5 feet 9 or 10 inches; the women are proportionally tall. "I have nowhere seen an assemblage of men and women whose *average* height and *apparent* bulk equalled that of the Patagonians. Tall and athletic as are many of the South Sea Islanders, there are also among their number many who are slight and of low stature.

"But little hair grows on the faces or bodies of the Patagonians: from the former it is studiously removed by two shells, or some kind of pincers. Although they do not try to improve their coarse features by piercing either nose or lips, they disfigure themselves not a little by red, black, or white paint, with which they make grotesque ornaments, such as circles round their eyes, or great marks across their faces. Upon particular occasions all the upper part of their body is queerly decorated by daubs of paint.

"On their feet and legs are boots made of the skins of horses' hind legs. Wooden, if they cannot get iron, spurs; sets of balls;* a long tapering lance; and a knife, if one can be procured,—complete their equipment.

"The women are dressed and booted like the men, with the addition of a half petticoat. They clean their hair, and plat it into two tails. Ornaments of brass beads, bits of coloured glass, or such trifles, are prized by them.

"Mounted upon horses of a middle size, under 15 hands high, the Patagonians seem to be carried no better than dragoons who ride 18 stone upon horses able to carry 10; yet they go at full speed in chase of ostriches or guanacoes. When hunting or making long journeys, they often change horses.

"The huts of these wanderers are somewhat like gipsy tents. Poles are stuck in the ground, to which others are fixed. Over them are thrown the skins of animals. An irregular tilt-like hut is thus formed." †

The north-eastern portion of Tierra del Fuego is a better country than Patagonia. The woody mountains of the south-western islands are succeeded, towards this north-east district, by hills of moderate height, partially wooded; northward of which are level expanses almost free from wood, but covered with herbage adapted to the pasturage of cattle.

The climate is a mean between the extreme of wetness and drought, which are so much felt by the neighbouring regions.

The Tekeenica, natives of the south-eastern portion of Tierra del Fuego, are low in stature, ill-looking, and badly proportioned. Their colour is that of very old mahogany, or rather between dark copper and bronze. The trunk of the body is large in proportion to their cramped and rather crooked limbs. Their rough, coarse, and extremely dirty black hair half hides, yet heightens a villainous expression of the worst description of savage features.

The Yacana-kunny, natives of the north-eastern portion of Tierra del Fuego, resemble the Patagonians in colour, stature, and, excepting boots, in clothing. They seem to be now much in the condition in which the Patagonians must have been before they had horses. With their dogs, with bows and arrows, balls (*bolas*), slings, lances, and clubs, they kill guanacoes, ostriches, birds, and seals.

The names of Patagonia and Tierra del Fuego were given by Magalhaens: the first, probably, from "patagones," meaning very large feet, referring to the Indians; and the second from the numerous fires seen upon that land at night.

For a lengthened and very interesting account of these people, the reader is referred to Captain FitzRoy's work, "Voyages of the *Adventure* and *Beagle*," Vol. II., chaps. vii., viii., and ix.

DESCRIPTION OF THE COAST.‡

On the northern shore of the Plata there is a sprinkling of hills of a granitic structure, scattered amidst extensive plains; while, on the South, or right bank, there is neither a hill, rock, nor even a stone. So low is the land between Point Piedras and Cape San Antonio, that around the great bay called Sanborombon it is extremely difficult to say where the water ends, or the coast line begins. Each difference, of even a foot, in the height of the water, makes a change of cables' lengths, if not of miles, in the position of the limiting line between water and land. In consequence, it is very dangerous for ships to approach that shore; and although the bottom is in many places soft, often extremely deep mud, there are other spaces in which hard lumps of tosca* are found, almost as injurious to a ship's bottom as actual rock. Captain FitzRoy continues, "I am not aware that there is any granite on the South side of the River Plata near the shore; and although the name 'Piedras' would incline one to suppose there are rocks or stones near it, I could only find *tosca.*"

---

* *Bolas*, Spanish. Two or three balls, connected by a thong of hide, which they throw at animals or men, to entangle or disable them.

† Journal of the Royal Geographical Society, Vol. VI., pp. 315, 316.

‡ Extracted principally from Captain FitzRoy.

POINT PIEDRAS, as before stated, is low, ill defined, and very difficult of recognition. A few stunted trees are visible at a small distance from the shore. This point should be approached with the utmost caution.

The *Piedras Bank*, a dangerous shoal, extends 7 miles to the East, and 15 miles southward of the point. It consists of sand and "tosca," as above stated, in its northern part. Within its limits the lead cannot be trusted, the bottom being uneven.

SANBOROMBON BAY, formed by Point Piedras and Cape San Antonio, has low shores in its northern part, as far as the *River Salado*, whose bar is only to be taken by the smallest vessels. At about 5 miles South of its bar is a rising ground, 30 feet above the sea level, and covered with trees called *Mount Rosas*, which from its elevation and character is a good mark for the Salado. The *Sanborombon River*, South of this, is not navigable. The coast hence to Cape San Antonio is a mere marsh, with occasionally a few trees. The great extent of the Taya Bank prevents approach within 5 miles of the land; the ground here is extremely soft, so that the lead will sink deeply into it, if allowed to lie.

CAPE SAN ANTONIO is a name applied in the old charts to a space of 30 miles in extent. To avoid confusion, the northern part of this was called *Rosa Point*, and the southern Point Medanos.

From *Cape San Antonio*, in lat. 39° 19½′ S., lon. 56° 42½′ W., to rather more than halfway towards Cape Corrientes, the sea coast is sandy and low. Behind the beach are sand-hills, and farther inshore are thickets, affording shelter to numbers of jaguars. "In sailing along," continues Captain FitzRoy, "even with both leads going, we were, for a few minutes, in imminent danger of grounding upon a bank, or ledge, which extends 6 miles E.S.E. from *Point Medanos.* The water shoaled so suddenly, and so irregularly, that I could not tell which way to steer; and as we had been running directly before the wind, it was impossible to retreat by the safest track (that which we had made in approaching): however, by persevering in pushing eastward away from the land, steering one way or another as the water deepened, we at last got clear. We then stood out to gain an offing, rounded the bank, and hauled close inshore again, nearly opposite to a large salt lagoon, called *Mar-chiquito*, which approaches the sea so closely as to have occasioned an idea that, by cutting through the narrow strip of land which separates them, a fine port might be formed.

"In the vicinity of Mar-chiquito, the country (campo) is very fertile and well watered. Sheltered to the South by a range of down-like hills, whence numerous brooks originate, it gives abundant pasturage to many thousands of cattle, and is considered by the Buenos Ayreans to be the finest district of their territory. This range of hills extends in a west-north-west direction for more than 50 leagues, and varies in name at different places. That part next to Cape Corrientes is called Sierra Vuülcan (an Indian word, which means 'opening' or 'having openings'); 20 leagues inland is the ridge named Tandil; and at the western extreme is a height called Cayru. Between Tandil and Cayru there are many hills known by particular names, but they are all part of the range above mentioned; and it is a remarkable fact, that not only this range, that nearer to Buenos Ayres called Cerrillada, and that of which the Sierra Ventana forms a part, extend nearly in an E.S.E. and W.N.W. direction; but that most of the ranges of high land, most of the rivers, and the greater number of inlets, between Plata and Cape Horn, have a similar direction, not varying from it above one point, or at most two points, of the compass.† After we became aware of this peculiarity, it was far easier to avoid shoals, as they all lay in a similar direction.

---

* *Tosca* is a kind of hardened earth, rather than soft stone, about the consistence of slightly baked clay: it is of a dark brown colour, and varies in hardness from that which is almost stony, to the texture of a sound old cheese.

† So constantly did Mr. Harris, who piloted the vessel, give this course (W.N.W.) on subsequent occasions, that it became quite a joke; but it is nevertheless a strong corroboration of what I stated respecting the general direction of the inlets, and ridges or ranges of hills.—*Captain FitzRoy.*

"CAPE CORRIENTES is a bold, cliffy promontory; off which, notwithstanding the name, I could not distinguish any remarkable current. It is said to be hazardous for a boat to go along shore, near the high cliffs of that Cape, because there are rocks under water which sometimes cause sudden and extremely dangerous 'blind breakers:' more than one boat's crew has been lost there, in pursuit of seals, which are numerous among the rocks and caves at the foot of those cliffs. Hence to Bahia Blanca is a long and dreary line of coast, without an opening fit to receive the smallest sailing vessel, without a remarkable feature, and without a river whose mouth is not fordable. Even the plan of it, on paper, has such a regular figure, that an eye accustomed to charts may doubt its accuracy; so rarely does the outline of an exposed sea coast extend so far without a break. A heavy swell always sets upon it; there is no safe anchorage near the shore; and, as if to complete its uninviting qualities, in the interior, but verging on this shore, is a desert tract, avoided even by the Indians, and called, in their language, Huecuvumapu (Country of the Devil). In exploring this exposed coast, southerly winds sometimes obliged us to struggle for an offing; and we lost several anchors in consequence of letting them go upon ground, which we thought was hard sand lying over clay, but which turned out to be tosca, slightly covered with sand, and full of holes. The lead indicated a sandy, though hard, bottom; but we found it everywhere so perforated, and so tough, that, drop an anchor where we might, it was sure to hook a rock-like lump of tosca, which sometimes was torn away, but at others broke the anchor.

"Along this extent of sea coast, halfway between the currents in the vicinity of the Plata, and those occasioned by strong tides near Blanco Bay and the River Negro, we found no current. Whether there was a rise of tide, it was not easy to ascertain by the lead line, when at anchor, from the bottom being so uneven; and to land was impossible, on account of a furious surf. Anchorage is not a word I should use in this case (where the anchor was only let go for a short time, while the ship's position could be fixed with accuracy, and our triangulation carried on in a satisfactory manner), as it might deceive a stranger to the coast; stopping place would be better."

There is a bare sandy spot on the East side of *Cape Corrientes*, around the upper part of which the green turf has a regular appearance, as if artificially cut. *Mogotes Point* is 5 miles South of Cape Corrientes, and takes its name (corn-stacks) from several peaked sandhills like corn-stacks. *Andres Head*, the next point, is the S.W. extremity of a range of high, bold cliffs; beyond it the shore is low, sandy, and rocky. The bay between it and Mogotes Head should not be entered by ship or boat, as it has many sunken rocks, causing blind breakers, above alluded to. From Andres Head to *Hermeneg Point* the coast is rugged, and from 30 to 80 feet high, and has neither shelter nor anchorage for a ship. Hence to *Asuncion Point* and *Mount Hermoso* the coast has a similar appearance, and is equally unfit to approach. *Asuncion Point*, a projecting sandhill, 120 feet high, is difficult to distinguish, even on this unvarying coast.

BAHIA BLANCA lies at the western extremity of the coast just described. Captain FitzRoy here found the water much discoloured. *Mount Hermoso*, a little hill, is about 140 feet above the sea. It lies near the head of the bay; on this low coast it is somewhat remarkable, as being the only peaked hill close to the water; and having under it a low, cliffy point, the only one thereabouts. Near it is a roadstead, at the head of Blanca Bay, close to the entrance of Port Belgrano, but divided from it by a bank.

The SIERRA VENTANA, a high mountain, 3,500 feet above the sea, and still more remarkable from its lying in this low country, is to the northward of the Bahia Blanca. It is called by the country people (Gauchos) Monte Hermoso, or beautiful, from its fine and striking appearance, but the term is now restricted to the little mount before mentioned. A good bearing (astronomical, if possible) of the Sierra Ventana, and the latitude of the ship, will fix her position with certainty.

The deep bight formed by the sudden change in the direction of the coast on each side of Bahia Blanca is called the RINCON (corner). Generally speaking, it is shallow. Throughout the space, within the depth of 20 fathoms, there is anchorage with North and West winds, which are the most prevalent. In the Rincon, and along the coast to the eastward, the bottom is invariably sand, or sand mixed with broken shells or gravel, but its quality is very different in different situations, and requires great attention, whether for anchoring or for avoiding the numerous and very dangerous sandbanks. On and near the banks the sand is always of a dark brown colour, very fine; and generally unmixed with other substances, except sometimes bits of shells. On this ground the recovery of an anchor is always very doubtful, as most of the banks are of tosca, covered by this dark brown sand or pulverized tosca. In the offing, over very soft ground, the sand is speckled, or black and white, rather fine generally; when coarse, it is mixed with gravel; broken shells are also frequent. With these last soundings the seaman may be certain that he is out of danger from a shoal, and that he may drop an anchor with confidence.

PORT BELGRANO is at the head of Blanca Bay, and is the first harbour after quitting the Rio de la Plata. It is an excellent and extensive harbour; the channel to it, in a W.N.W. direction, is deep enough for any ship, and a soft muddy bottom. The land around is exceedingly low, and the ground is covered with saline deposits. From the land being so low, the water being intersected by banks, and having so few marks, it is very difficult of access; and no place can offer less that is agreeable to the eye, especially when the tide is out, and much of the banks show above water. A succession of similar inlets, indenting a half-drowned coast, extend hence, almost to the Rio Negro; and although the dangers are numerous, tides strong, banks muddy, and the shores everywhere low, the intervening ports are safe and likely to be useful. They are *Falsa Bay*, *Green Bay*, *Brightman Inlet*, *Union Bay*, and *San Blas Inlet*. The climate of Port Belgrano is delightful, and healthy to the utmost degree, notwithstanding such extensive flats, half covered with water, and so many large mud banks. Perhaps the tides, which rise from 8 to 12 feet, and run 2 or 3 knots an hour, tend to purify the air; indeed, as the whole inlet is of salt water, there may be no cause for such effects, as would be expected in similar situations near fresh water.

Argentina, the Buenos Ayrean settlement, lies some distance beyond Port Belgrano, in the midst of a level country, watered by several brooks, and much of it thickly covered with a kind of trefoil. The fort is a mud-walled erection, a polygon of 24 sides, within and around which are a few huts and small houses, inhabited by the garrison and settlers, altogether about 400 souls. It was commenced in 1828, as an advanced post, and has not made much progress since. The most serious objection to the locality, as an agricultural, or even as a mere grazing district, is the want of rain. Two or three years sometimes pass without more than a slight shower. Good fresh water may generally be obtained, independent of the few running streams, by digging wells between 4 and 10 feet deep. There is but little firewood. Deer and other game are numerous, and fish swarm in the creeks. Fresh beef may be procured at the fort.

Falsa Bay is an extensive and dreary waste. Sandbanks surround it, and neither land nor landmarks can be seen until a vessel is within the banks, and then they are not wanted. The same remarks, as to the banks and the passages between them, apply here as to Bahia Blanca, and to Green Bay and Brightman Inlet. It is high water in Falsa Bay at 5ʰ 30′.

To the South and West of Falsa Bay the *Laberinto Shoals* extend to the S.E. from Ariadne Island to lat. 39° 27′. They are nearly all under water; the outermost and most dangerous is the Paz Bank, of 4 feet water. As the land is in sight, it is not difficult to avoid it in daylight. *Laberinto or Labyrinth Head* is a perpendicular bluff, 40 feet high, apparently the termination of the shore on the South side of Brightman Inlet.

Green Bay is beset with shoals within sight, though the entrance looks somewhat tempting. If necessary to enter, take low water, and keep close to Green Bank, and anchor to the North of the narrow passage of the East end of Green Island, with the peaked hillocks bearing W. by S. The flood tide sets across the entrance, not into it. High water at 5ʰ 10′, full and change. Tides rise at springs, 12 feet; at neaps, 8 feet.

A vessel approaching *Brightman Inlet*, with a view to anchoring, should not go to the northward of lat. 39° 30′. Still more South will be safer, as to the North of it is dangerous, while South it is quite free from outlying dangers. There is abundance of game on Green Island, and good water may be got by digging wells about 8 feet deep on Green Island. Fuel in abundance may be got on the main land.

The *River Colorado* will admit vessels not drawing more than 7 feet. The bar at the entrance, and the banks within, are constantly shifting. *Union Bay* will suit vessels drawing less than 17 feet. In smooth water and fair wind a line-of-battle ship might enter, but the depth of 15 or 16 feet is usually draught enough.

SAN BLAS BAY is no place for a ship to enter, unless under favourable circumstances of weather, wind, and tide: it is decidedly dangerous with a south-easter, because there is then a sea on the banks outside which confuses the pilot's eye, and prevents his distinguishing the proper channel; besides which, thick weather, if not rain, is the general accompaniment to that wind. In the middle of the entrance to San Blas Bay is a rock, with 8 feet least water on it, which is very dangerous. The extreme dryness of the place causes great injury to shipping, and something at the bottom acts chemically on the iron cables, and corrodes them in a surprisingly short time. An English oak-built ship was rendered unseaworthy by being moored for four months here, and the cables were reduced one-third in size.

Between San Blas and the River Negro the stream of tide begins to set northward at half flood, and continues to run in that direction until half ebb. Off Raza Point it is high water at noon, at full and change; tide rises 12 feet. Variation, 17° East.

RIO NEGRO.[*]—In coming from the eastward for Rio Negro, the navigator should endeavour to make the land in about the parallel of 40° 52′ S., lon. 62° 15′, when he will first see Point Raza, which will be readily known by three remarkable hummocks. After approaching to within about 1 league of this point, he has to steer S.W. toward Rio Negro, taking care not to come into less than 6 or 8 fathoms of water, with a sandy bottom. The shore is a continuation of low sand-hills, interspersed with heath and brushwood, until you approach the river, where the hillocks become more elevated, and are composed of clear white sand, lying in ridges or undulations like the waves of the ocean.

The mouth of the Rio Negro[†] is situated in 41° 4′ S., and 62° 44′ W. The river is supposed to rise at the foot of the Andes, whence it runs generally in an easterly direction towards the sea: its width at the mouth is about 2 miles, but it rapidly narrows; and at the town of Carmen, only 16 miles from its embouchure, it is about 280 or 300 yards. It does not decrease much in width above the town for the next 20 miles; but it is entirely unfit for navigation, even for the smallest class of merchant vessels, beyond 4 miles above Carmen.

The river is full of small islands and banks, the latter generally of sand. The former, when at all elevated, which is rare, are valuable for agricultural purposes, as the soil upon them is rich, and the proximity of water renders it moister than along the banks of the river and elsewhere. They are, however, generally flat, and are partially if not totally inundated every high tide. There are eight hours ebb and four hours flood tide. The current down the river is very strong.

Floods occur twice during the year: once in December or January, occasioned by the melting of the snow on the Andes; the other in June or July, caused by heavy rains in the interior. The summer floods, when very strong, do much injury to the cattle and crops along the banks. They are, however, usually considered by the inhabitants, especially if they occur early in the season, to be of great importance and benefit, as they bring the only water they can depend upon to moisten the parched land, and render it fit for cultivation.

The Rio Negro is a bar river. The bar is situated about 4½ miles from the entrance, and is exceedingly dangerous to vessels passing over it. There are as many as six channels by which the water of the river discharges itself into the sea. Three of them have sufficient depth to allow vessels drawing 11 feet of water to pass safely over; and one has water for vessels drawing only 9 feet; the two others are of little depth, and are continually shifting.

Vessels drawing as much as 12½ feet have occasionally passed and repassed the bar, but it is considered highly dangerous, and can only be accomplished at peculiarly favourable periods; but no vessel drawing more than 11 feet of water should attempt to enter the river, and not then unless there is a local pilot on board.

It is necessary to be remembered, that though vessels drawing as much as 14 feet would be able to cross the bar and enter the river, after a succession of south-easterly or easterly gales, yet the wind necessary to enable you to leave it would have an opposite effect, and would lessen the depth considerably; therefore, if a vessel drawing much water should ever be taken into the river, it is a great chance if ever she leaves it again.

---

[*] For an Account of a Voyage to explore the River Negro from its mouth to its supposed sources, see Journal of the Royal Geographical Society, Vol. VI., p. 136.

[†] Extracted from a Report to the Governor of the Falkland Islands, by Mr. Murrell R. Robinson, contained in the Journal of the Geog. Soc., Vol. XIV., 1844, p. 130.

The bar and the numerous sands at the mouth of the river are composed of quicksand, and their position is continually shifting; therefore no plan, however accurately surveyed, can be depended upon for more than a few months. The local pilot has two landmarks fixed on the North bank at the entrance of the river, to assist him in bringing vessels through the channels. He informed me that he is obliged to change their position frequently, especially after a severe gale or heavy floods.

Many places that were dry land a few years since are now covered with water, and *vice versâ*. I was told that soon after the first settlement was formed, a lighthouse was built on the North bank of the river; its site is entirely covered by the sea.

There are many flat shoals and banks in the river between the mouth and the town of Carmen; they are composed of sand; and in some places, on the North side of the river, of sandstone, rendering the navigation of the river dangerous to strangers. There is, however, a local pilot paid by the Buenos Ayrean government. This person has orders to board a vessel before crossing the bar. Previous to the appointment of any regular pilot, many vessels were lost on the bar and in the river; indeed, its banks and the whole coast for miles on each side of the mouth are strewed with wrecks.

The town of CARMEN, on the North bank of the Rio Negro, 16 miles from its mouth, is in lat. 40° 48′ S., lon. 62° 55′ W. It was formed in 1779 by Viedma, a Spanish officer; and at present contains 1,230 inhabitants, including the soldiery. The town is irregularly and badly built, on the side of a steep sandstone bank, about 50 feet high; the most prominent object is the ruined mud fort, erected by Viedma at the formation of the settlement. There were some good stone and brick houses on the East side, but these are now buried in the drifting sand, the roofs alone being visible. Its principal export is wheat, the whole of which is sent to Buenos Ayres. Horses and sheep are plentiful, and will probably become a profitable export to the Falkland Islands.

It is high water at the bar, on the days of new and full moon, at 11ʰ 15′; and the water there rises 11 feet on the spring tides, and 8 feet on the neaps; but when the wind blows strongly from the S.E., the tide rises from 12 to 14 feet.

Along the coast is a regular tide of 6 hours flood and 6 hours ebb; but the flood tide inclines rather towards the shore, about N.E. by N., at the rate of 2 or 3 miles an hour. Consequently, in entering the Rio Negro, particular attention must be paid to the currents and tides, which set strongly to the N.E. round the Point de Maine, or outer point.

The Rio Negro separates the Provinces of La Plata from Patagonia.

GULF OF SAN MATIAS, OR ST. MATTHIAS BAY.—From Rio Negro the coast trends westerly, for about 33 leagues, whence it sweeps south-easterly in a broad semicircle, terminating in a peninsula, which projects to the N.E., thus forming the extensive Gulf of San Matias.

The north-eastern side of the Gulf is formed by the South Barranca range of hills, which extend from the Rio Negro to Belen Bluff, being highest (about 300 feet) near Belen Bluff. Thence nearly to Bermeja Head, the lowland above and inshore of the cliffs is extremely level. Near *Bermeja Head* (sometimes, but erroneously, called Cape Two Sisters) there are hummocks and irregular hills nearly covered with rough verdure. At the N.E. part of these considerable heights are two small peaks standing over two peculiar cliffs. Off all this coast, and in all other parts of San Matias Gulf, the sea is clear of all danger.

PORT SAN ANTONIO, at the head of the Gulf, is the best place on the coast for a large ship in want of repair, although in a bad or out of the way situation. In *Escondido Creek* the keel of a line of battle ship may be examined, the rise of tide being 24 to 32 feet. No fresh provisions, except game and fish, can now be procured. In approaching Port San Antonio from the south-eastward, Direction Hill and the Fort will be first seen; if from the South, the Fort is seen soonest, a more singular resemblance to a regular fortification it would be difficult to form. *Direction Hill* is 560 feet high, and three small hummocks close together are seen on its summit.

The entrance to the port is much exposed to S.E. winds; at such times it would be imprudent to approach it without a probability of speedily entering it, as you would be embayed, and have to contend with a heavy, rolling sea. On each side of the entrance is a bank partly dry at low water, and very steep at the edges. For entering, keep Direction Hill W.N.W. until the Fort bears S. by W., when you will see the hummock on Villarino

Point bearing N. by S., and the Nipple Hill (a hill 600 feet high, on the range of down-like heights North of the port) shewing over it on the same bearing. Having on these bearings, steer North, allowing for tide, so as to keep the Nipple just open of the West extremity of Villarino Point, which is low and sandy, with a few verdant hummocks on it, until you are half a mile from that part of the point, when you may go by the eye close to the East bank, round the point to the berth most convenient. It is high water, full and change, at 10ʰ 45′; the rise of the tide depends much on the wind, being generally between 3 and 5 fathoms.

The TIDE RACES near and in the Gulf of San Matias are remarkable. Captain Fitz-Roy says (Vol. II., p. 312):—"On the 6th of May, 1833, while returning from San José to the River Negro, our little vessel got into a ripple, which did not break, but had almost the appearance of a whirlpool. There was a short hollow swell, and an irregular motion in every direction, exactly like the boiling of a pot on a great scale. Here again they would touch no bottom with 50 fathoms of line and a heavy lead. These races and ripplings in such deep water about the peninsula of San José are very remarkable; chiefly because there are none such on any other part of the coast."

On another occasion his little vessels (the *Paz* and *Liebre*) when off Port Valdez, on the eastern side of the peninsula, fell in with these "races."—"Towards noon the wind fell light, and the vessels were swept by a strong tide stream towards a 'race,' whose noise might have appalled the crews of much larger and stouter barks. No bottom could be struck with the deep sea lead, and no efforts of the crew at the oars had much effect in arresting their progress toward apparent destruction." . . . . At 5ʰ that afternoon they were 18 miles off shore, out of soundings with their lead lines, and yet were only 1½ miles from the eastern part of the races. For 2 hours they passed through a rippling, but could strike no soundings with 60 fathoms of line.

The tide races are less formidable within the bay than off Point Norte, or outside.

PORT SAN JOSEF is a barren and desolate place, without wood or fresh water, and too large for a harbour. On each side of the port are bold cliffs, headlands, with deep water to seaward; but a shoal ledge runs from one to the other under water. The tide stream rushes into and out of it in a violent manner, especially when opposed by wind; but after the narrow part of the entrance is passed, all agitation of the water ceases, except what may be caused by wind. That it is too large for a harbour, there was proof at the time of the *Beagle's* visit, for they found the wreck of a small vessel at the N.E. part of the port, which had been driven from her anchors and totally lost, though she was lying in a land-locked bay, or rather gulf. It is high water in the entrance, on full and change, at 10ʰ; rise, 25 feet. Variation, 17° 45′ E.

From the East side of Port San Josef there is a continued cliff, from 60 to 100 feet high. No high land appears near the shore, all looks low, bare, and sunburnt. No danger lies under water, but the tide races off it, and to the eastward of Norte Point, are troublesome and dangerous. *Norte Point*, or *Lobos Point*, is lower than the adjacent cliffs, and a reef projects under water about a mile, so that it must not be approached within that distance; beyond it is deep water.

From Norte Point to Valdes Creek the land is low, mostly a shingle beach, and off this coast are the worst tide races, being occasioned by rocky patches lying from 2 to 10 miles off those S.E. of Norte Point.

Valdes Creek, a dangerously deceiving inlet of a singular character, may be known by the shingle beach ending, and by a line of cliffs commencing, at Cantor Point on the South side, and extending to *Ercules Point*, a high white cliff. The entrance to Valdes Creek is narrow, and sometimes entirely closed up by shingle. From Cantor Point to Nuevo Head the upper part of the coast is nearly horizontal.

NUEVO GULF is easily known by the two well defined headlands at its entrance: off Nuevo Head, the easternmost, no danger exists. It is steep-to, 200 feet high, and bold. *Ninfas Point*, the westernmost, is 240 feet high, and makes as a double point. It ought not to be approached within 2½ or 3 miles, on account of rocky ledges extending from it. In mid-channel you are out of the ripplings, and the tide is sufficiently strong to carry a vessel to windward, while hove-to, in a fresh gale. When once well inside the heads, the tide is much less strong, and there is no danger. The cliffs here and to the northward contain prodigious quantities of fossil shells. Captain Morrell says that in this bay are many fine springs of excellent water, and numerous birds of beautiful plumage. The waters abound with scale-fish of almost every variety. It is therefore an excellent place for ships in want of refreshments, which may readily be obtained.

Whale ships, having good ground tackling, may lie in any part of the bay in perfect safety. The best anchorage is on the West side, in from 5 to 10 fathoms, at about a mile off shore, as in this part easterly winds seldom, if ever, blow with sufficient violence to injure any ship lying with her anchor ahead.

The River Chupat, the mouth of which is in lat. 43° 20½′ S., was discovered by Lieutenant Wickham in 1833. Its banks are much frequented by the wild cattle, large numbers of which were taken by the Spaniards. The shores are of a rich, alluvial soil, covered with immense timber drifts; some of the trees are large and sound, lying several hundred yards from the banks, showing that the periodical floods must be great. The river itself is free from drift timber, but is shoal and narrow, few places being deeper than 6 feet at low water, or wider than 100 yards. The stream ran down at 2 or 3 knots an hour. It is high water, at full and change, in the entrance, at 7^h 10′; rise, 13 feet. Variation, 17° 50′ E.

PORT SANTA ELENA, in lat. 44° 30′, is a small bay, which was surveyed by the officers of the Spanish sloops *Descubierta* and *Atrevida* in 1794. It is quite open to the South; and near the middle of the entrance, which is only 1¾ miles wide, is a small shoal of 12 feet; and at 2 cables *true* East from it is a low islet, named *Florido*. The best passage in is to the West and N.W. of these, where there will be found 10 to 7 and 6 fathoms of water, in the N.W. cove of the harbour.

The bay, according to Mr. Weddell, affords good shelter from S. by E. westward to E. by S.; and as the heavy and prevailing winds are between these points, this place may well be recommended to stop at for a few days. The winds are seldom from S.E., and generally light; and the tide running strong across the entrance to the bay, the sea, during strong S.E. winds, is much cut off.

Guanacoes are here very numerous, but not easily approached; they much resemble deer; their flesh is well tasted, like well fed mutton; and they are large enough to make them an object of consideration to ships touching on the coast in want of refreshments. One was caught, which, when cleaned, weighed 120 lb. The difficulty of procuring these animals, from their fleetness and watchfulness, is such, however, that they cannot be taken hastily, but must be entrapped by lurking behind bushes about their watering places at the dawn of the morning. Hares, which are also numerous here, are much larger than in other countries. High water, full and change, at 3^h 45′, or 4^h; vertical rise, about 20 feet.

Captain King says that this harbour may be easily known by some hummocky hills on the N.E. projecting point, upon the easternmost of which is a remarkable stone, that appears to have been placed there as a monumental record, but which is a natural production. The best anchorage is at the N.W. corner of the bay, in 6 or 7 fathoms, but not too near the shore; for when the sea is heavy, the ground swell breaks to some distance off. In working into the bay, the 2 fathom bank must be avoided, for which the Islet Florido is a good mark.

There are two wells on the N.W. side of the harbour, but the water is too brackish to be of any value, nor is fresh water obtainable here. Of fuel a temporary supply may be procured from a low shrubby tree, which is moderately abundant.* Besides guanacoes, ostriches, armadilloes, and the cavia, or Patagonian hare, are to be procured, as are also wild ducks, partridges, snipes, and rails; but fish seem to be scarce. The Indians sometimes visit this place, principally for burying their dead.

"Seamen should remember that a knowledge of the tide is of especial consequence in and near Port Santa Elena. During a calm, we were carried by it towards the reefs which line the shore, and were obliged to anchor until a breeze sprung up.

"The coast along which we had passed, from Point Lobos to the N.E. point of Port Santa Elena, appeared to be dry and bare of vegetation. There were no trees; the land seemed to be one long extent of undulating plain, beyond which were high flat-topped hills, of a rocky, precipitous character. The shore was fronted by rocky reefs, 2 or 3 miles from high water mark, which, as the tide fell, were left dry, and in many places were covered with seals."—*Captain King.*

---

* The wood, although of very small size, burns well, and is much prized by sealers for that quality. The tree bears a yellow flower, with a prickle at the extremity of every leaf. The sealers call it *piccolo*, from the small dimensions of the stem. The roots also are dug up and used for fuel.—*Captain King.*

Cape Raso is 4 leagues to the northward of Port Santa Elena. On the coast between are numerous rocks, described by Captain King, one of which is nearly 5 miles from shore. An approach is therefore to be avoided, more especially as the tide sets along with some degree of strength. Great caution is therefore requisite, as the water is deep, and if becalmed, it may be necessary to anchor, which will be at least in 30 fathoms of water.

Cape Dos Bahias or **Two Bays** is about 7½ leagues to the southward of Port Santa Elena. It is a rounded point; a hill close to the sea, on the most projecting part of the Cape, being in lat. 44° 58′; a small islet, *Arcé*, to the S.E. of the Cape, in 45° 0′ 50″; and an islet, *Rasa*, in lat. 45° 6′ 30″, lon. 65° 20′ 45″. From Cape Two Bays the coast trends westerly, and forms the northern side of the great Bay of St. George, the southern limit of which is Cape Three Points, in lat. 47° 10′.

Captain Morrell says that in this port and its vicinity are many ostriches, gray and brown foxes, hares, deer, guanacoes, and a few wild cattle. This place is also the resort of many different kinds of wild geese and other fowl. On the shores are found seals, with some sea elephants and penguins. The latter lay their eggs in such abundance, that in October a great supply may be obtained in a few days.

Port Malaspina, in or about lat. 45° 12′, lon. 66° 39′, is fronted by the Viana Islets or Rocks, behind which vessels may find shelter from every wind, the S.E. excepted. In approaching this small bay, you will see the *Tetas* or *Paps of Pineda* to the North, abreast of which you may anchor in from 10 to 6 fathoms of water, fine sandy ground. Port Malaspina is a mere rocky inlet, unfit for anything except a boat.

There are many other good anchoring places between this and Cape Blanco, the southern extremity of St. George's Bay, which require no particular directions, as the coast is bold and clear of danger within half a mile of the shore. Easterly winds never blow here with any degree of violence; so that whalemen may cruise about these shores in the calving season with the greatest safety.

CAPE THREE POINTS is very easily discerned, and may be known by its very level outline, being a long range of table land, higher than any part near it, visible from the deck from more than 20 miles; and to the S.E., detached, but near the range there is a conical hill, which is readily discerned from the northward, but from the N.E. is not seen, being concealed by the ranges of land behind it in the S.W.

Cape Blanco, in lat. 47° 15′, is 6½ miles to the south-eastward of Cape Three Points. It is a low, rugged tongue of land, terminated by a rounded but very rugged hillock, and two smaller ones, which, when first seen, appear to be islands detached from the coast. The neck of land which forms the communication with the coast is low and sandy, and probably offers, on its South side, shelter from southerly winds.

There are several shoals off this part of the coast, which have not been thoroughly examined, but are supposed to be dangerous: they seem to have been thrown up by the force of the tide, which sweeps round the Cape, into and out of St. George's Bay, with great strength. The North and South ends of the northern shoal bear, respectively, from Cape Three Points and Cape Blanco, E.N.E. ¼ E., [*East*], distant from the former 7 miles, and from the latter 5 miles; consequently it extends N. 31° W. (by compass) 5½ miles, but is scarcely one-quarter of a mile wide.

The North end of the southern shore bears E. 5° N. [*S. 75° E.*] 7 miles from Cape Blanco, and extends in nearly a *true* South direction for 2 miles. Between these shoals is a passage 2 miles wide, and the depth gradually increases to more than 15 fathoms.

Within the outer shoals are two others, imperfectly known; and there is said to be much shoal ground to the N.E. At 14 miles N. 38° E. from Cape Three Points, in 1829, the depth decreased rather suddenly from 40 to 14 fathoms, pebbly bottom, and the edge of the bank was found to be about 8 or 13 miles within the soundings of 50 fathoms. On approaching, the quality of the bottom becomes irregular, and changes from ooze to sand, and the shoal patches are pebbly; so that by attention to the soundings and nature of the bottom, these shoals may be easily avoided. A good mark for the same purpose is, not to approach so near to the Cape as to see the rugged hillock of Cape Blanco; and to keep the high land of Cape Three Points on the horizon; this land being visible from the deck at 20 miles off.

The flood, or northerly tide, ceases in the offing at 4h 15′ after the moon's passage;

but in the neighbourhood of the Cape, and among the shoals, are strong ripplings, which set with considerable strength.

Off the coast southward, between Cape Blanco and Port Desire, within the distance of 3 to 5 miles from shore, are several small patches of rock, which uncover at half tide; but beyond that belt the coast is free from any known danger, and may be approached by sounding in not less than 14 or 15 fathoms; within that limit the ground is foul.

PORT DESIRE, latitude 47° 45′.—To the northward of Port Desire the land is low, with a shingle beach, excepting for the first 3 miles, where it is high and cliffy. The North point of the entrance is a steep bluff, which is remarkable as being the only point of that description along the coast to the northward. At 3 miles N. 28° E. from this bluff is a ledge of rocks, *Surrel's Ledge*, at a quarter of a mile without which the depth is 13 fathoms. The *Tower or Steeple Rock* becomes visible after passing this ledge, and opens out when the North bluff bears S.W. ½ W. A ship bound to Port Desire, or requiring anchorage in the bay which fronts it, may find a good berth in 6¾ fathoms, well sheltered from N. ¾ W. to S.E. ½ E., with the North bluff bearing N.W. ¼ W., the Tower Rock, W. ¾ N., and Penguin Isle, S.E. ¼ E.

This situation being a little to the southward of the fairway of the port, and about 1½ miles from the nearest shore, is quite out of the strength of the tide; the bottom, being strewed with rounded stones, is rather foul for hempen cables; but the holding ground, although of suspicious quality, seemed to be good: at this place the vertical rise of tide was found to be 18½ feet. High water, full and change, 12^h 10′.

The *Beagle Rock* lies not far from mid-channel, just without the entrance to Port Desire. The *Beagle* struck on it at night in 1829, and could not afterwards find it, until Captain FitzRoy struck on it in January, 1834, in leaving the port, with the last quarter ebb. At low water there is but 8 feet water on it.

Port Desire was so called by Sir Thomas Cavendish, who put into it in November, 1586. The rock, called the Tower Rock, rises like a steeple out of the water; it is like an enormous dead tree with its branches lopped off, about 40 feet high, having its upper portion cleft as it were for about one-third down the middle. Commodore Byron, on his voyage in 1764-6, anchored off the harbour in 9 fathoms, and sent boats to examine within, when many shoals and rocks were found, with a tide exceedingly rapid. Captain King says that the river has rather a difficult entrance, from the strength of the tide, and its narrow width, and it is rendered still more confined from several rocky reefs that extend from the North shore to nearly mid-channel. There is good anchorage off the mouth. By waiting, therefore, for low water, all the dangers that exist will be seen, and the vessel easily dropt in with the tide, should the wind be, as it generally is, westerly. If it be fair, it is advisable for the ship to be in the entrance at slack water; or, if the breeze be strong enough, a little before: as the water is deep on the South shore, there seems to be no real danger that may not be avoided by a careful look-out for kelp, which always grows upon, and therefore plainly indicates, the existence of rocky ground. The course in is about W.S.W. ¾ W., and the distance from the entrance to the anchorage is 1½ miles. The latter is off the ruins on the North shore,* and the vessel should be moored. The tide sets in and out regularly.

The river was examined for 16 miles, but is probably navigable to a much greater distance. Four miles above the ruins there is a small peninsula, connected by a narrow isthmus to the North shore. By sending a party up, and stationing men with guns on the isthmus, it is very likely that several guanacoes may be shot as they are driven across it; for the peninsula is their favourite place to feed upon. These animals are very abundant, but unless stratagem is used, they are very difficult, from their shyness, to be approached. There are some water holes near the ruins, which generally contain water, but of so brackish a quality as scarcely to be worth notice. The wood, of a small size, is of the same species as that of Port Santa Elena, described in the note, page 344.

The following description of Port Desire is that of *Captain Morrell.*

About 11 leagues South of Cape Blanco is Port Desire, forming the sea-port of a large river. The mouth is very narrow, and has many rocks and shoals about it. It continues to be narrow for about 2½ miles from the entrance, when it expands into a broad basin, sprinkled with a number of small islands, frequented by seals. Near the mouth of this port, on the South side of its entrance, is a remarkable rock, rising from the water like a church steeple of Gothic order, and is known by the appropriate appellation of *Steeple Rock*. This rock forms a conspicuous landmark for mariners who are approaching the harbour, which would otherwise be difficult to find.

---

* Some years since a Spanish colony was founded at Port Desire, but not answering the purpose, it was soon given up. The ruins of the edifices, which are of stone, and the remains of a fruit garden, that at our visit produced quinces and cherries, distinctly point out the spot. —*Captain King.*

The tides are very rapid about this part of the coast, running at the rate of 8 miles an hour, nearly North and South, and rising 25 feet at each flood.

There are two springs on the South side of the river, about 2 miles from the beach, or in a line S.S.E. [*true?*] from Steeple Rock, from which water of a good quality can be obtained in abundance. Ostriches and wild beasts of various kinds resort to these springs to allay their thirst. At a short distance from the coast, toward the interior, there are wild cattle, red and gray foxes, deer, hares, and nutria, in abundance. The country abounds with guanacoes, resembling our deer, but much larger, some of them being 13 hands high, remarkably swift, and very shy. On the islands in the vicinity of the port, in 1822, were fur and hair seal, and sea elephants, penguins, mollymois (*malimauks?*) and other oceanic birds on the islands, where they form their rookeries for the purpose of laying their eggs and hatching their young.—(*Voyages*, page 44.)

Penguin Isle, lat. 47° 55′.—Of this little isle the outer side is bold, and may be passed very close without danger, for the stream rather sets off than toward the shore; but the tide hereabout is very rapid, and forms, even in a calm, strong ripplings, which in a breeze must be very dangerous for boats. The flood sets to the northward, and during its strength more than 3 knots; the ebb was found to have set 15 miles to the southward in five hours. Off the island the northerly stream ceases at about four hours, or four hours and a quarter after the moon's passage, which is three and a half, or four hours, at least, after high water on the shore.*

SEA BEAR BAY, according to Captain King, one of the best anchorages on this coast, is in lat. 47° 56′ 49″, lon. 65° 44½′, but it is difficult of access without a leading and fresh wind, on account of the strength of the tides, which set to the northward, through the narrow channels separating the rocky islets that appear between Penguin Island and the main land. The bottom besides is not only deep, 23 to 30 fathoms, but is very foul and rocky; and although a ship may be prevented from drifting through by dropping an anchor, yet its loss, from the foulness of the ground, would be almost certain.

In entering the bay, border pretty close to the low rocky point to the southward, in order to avoid a reef that lies about a quarter of a mile without it; but as the sea always breaks upon it, the eye and a due consideration to the tide are the best guides. The reef extends some distance to the eastward of the breakers, and therefore the tide, when within it, sets in or out of the bay, but with little strength.

No wood of any size is to be procured here, and scarcely any water. The passage to the watering holes is over a small rocky bar, which a boat may cross at three-quarters flood: it is immediately within the eastern point of the bay: there is a small spring at the North end of the third sandy beach, which a herd of guanacoes was observed to visit every morning; but as the water trickles down in a very small quantity only, it cannot afford more than a temporary supply. Two of the three wells at the point were found to be full of sea water, which had breached over the rocks; the other contained about forty gallons of rather a brackish taste.

Besides a good and secure anchorage, this place affords no other advantage, but it is convenient for sealing vessels while the people are employed upon Penguin Island. High water, full and change, at 12ʰ 45′; rise, 20 feet.

Spiring or Ferrer Bay is contained between the South head of Sea Bear Bay, and a point of land within *Ferrer Islet*, or the *Shag Rock*, which lies in lat. 48° 8′ 25″, lon. 65° 53′ 30″. The bay is much exposed, being quite open to the South and East; and at the conclusion of a S.W. gale, when the wind always veers to South and S. by E., there is a considerable sea. The shore is skirted for some distance off with many rocks, and the bay altogether is quite unfit for anchorage. The height of the land is the same as that about Sea Bear Bay, but has more nodules or lumps of rocky hills on the outlines of its summits.

---

* On the 30th of December, 1822, Mr. Weddell, in the *Jane*, saw several waterspouts off Penguin Island, in lat. 47° 54′.

The *Ferrer*, or *Shag Rock*, is a whitish mass, perfectly bare, at about 1½ miles from shore; at 2 miles to the S.S.E. of it are four small dark coloured rocks, and at 3 miles South from it is a rocky islet. On the land, and at a short distance from the coast, are three hills, which appear, when a little to the southward of Sea Bear Bay, like three round topped hills, but on reaching more to the southward they appear to extend in length, and form into two hills; and at 3 leagues to the southward of the Shag Rock they look like one mass of table land.

The *Sirius Rock* was discovered by the ship of the name striking on it on March 10, 1849. It is about 10 miles E.N.E. of the South point of Spiring Bay.

WATCHMAN'S CAPE, the *C. de los Desvelos* of the Spanish navigators, is situate near lat. 48° 18′ 55″, lon. 66° 18½′. It is very low, but may be known by a bell shaped mount, which stands at about 2 miles from its extremity, and from the southward resembles, in shape and colour, Monte Video, in the Rio Plata, but is not so high. It is likewise called *Monte Video*, or *Redonda*. Its position is that given above.

At 2 leagues from the extremity of the cape is a shoal with kelp upon it, on which the least water is 3 fathoms, but on approaching it the depth gradually decreases; there are also many other shoal patches, but all are covered with seaweed. The *Adventure* passed several in 7 and 9 fathoms.

The ground is very foul and uneven for more than 4 miles from Watchman's Cape, towards the Bellaco Rock, but not quite out to it. Hence the coast trends to the westward, and becomes higher.

The Bellaco Rock, or *San Estevan's Shoal*, which was discovered by the *Nodales* in 1619, was again found by Captain Stokes in 1828, on his passage down the coast, and its position was then ascertained to be, lat. 48° 30′ 50″, lon. 66° 10′. It bears S.E. by S., 10½ miles from Watchman's Cape, and S.E. from Monte Video. The rock appears like a dark mass, about 9 or 10 feet above the water at high tide, and in form of a boat turned bottom upward: within half a mile of its South side the *Beagle* sounded in 12 and 15 fathoms, rocky bottom; and on its East side, at the same distance, the depth is from 20 to 24 fathoms. Captain FitzRoy says, that there are at least two distinct masses of rock, and that a ship may pass between them. The larger, or eastern rock, is about 100 yards long and 80 yards wide, with kelp growing on most parts of it, which most likely will prevent the top wearing away, while so protected by seaweed. According to the tide (which rises 20 feet), it will appear nearly awash, or as high as the hull of a ship. The ground around it being foul and uneven, the coast in the vicinity should therefore be avoided.

And here it may be noticed that the whole of the coast between Cape Blanco, in lat. 47° 15′, and Port St. Julian in 49° 12′, is more or less strewed with shoals, which are the more dangerous from the strength of the tides setting between them. In navigating, generally, off the coast, the depths and quality of the soundings will be a guidance; observing that, when the depth exceeds 40 fathoms, there exists no known danger. By night, in particular, regard should be paid to the tide, which runs in considerable strength, parallel with the shore.

PORT ST. JULIAN.—*Cape Curioso*, on the North side of the entrance of Port St. Julian, is situate in lat. 49° 11′ 10″, lon. 67° 35′. Between Watchman's Cape and this port the land is of moderate height.

Wood's Mount, in lat. 49° 14′, lon. 67° 44′, is visible from the deck for at least 11 leagues, and is a good mark for Port St. Julian, being flat-topped, 950 feet high, and much more elevated than the land about it; the trend of the land may also be a guide on approaching; but as the land about the Port is higher than that either to the northward or southward, and as Wood's Mount is so remarkable, no mistake can be made. In a line with the South point of the entrance the mount bears W. 16½° S. [*N. 86½° W.*] The North head, Cape Curioso, is a low point jutting out to the northward; it is formed of cliffs horizontally stratified, of which the upper part is whited-brown, and the lower generally black, or black streaks.

Keeping Wood's Mount S. 67° W. will lead to the South Head; which will be easily distinguished when at the distance of 6 or 8 miles or more, according to the state of the weather.*

---

* Captain King's Sailing Directions, page 0.

The bar of this dreary port is shingle (or gravel), and often altered in form by south-east gales, or unusual tides. Under ordinary circumstances, the tide rises 30 feet at full moon.

Captain Morrell has said:—It is somewhat difficult to find the entrance to Port St. Julian, on account of its southern or outer point projecting past the northern point, so as to conceal the opening. It may be known, however, by a large white cliff stretching along shore from the South almost to the mouth of the harbour. No trees are to be seen, but there are some dark bushes on the sides of the hills. The bar at the entrance of the port sometimes shifts and changes its position; previous to attempting the entrance, therefore, I would recommend sending in a boat to sound. In entering the harbour the course is about S. ½ W., and the water sufficiently deep when you are once over the bar, on which will be found, in the channel, about 4 fathoms at full sea. The tide rises about 30 feet. Both wood and water, in the winter, may be obtained, but with difficulty. A ship can lie in perfect safety from all winds. The natives seldom visit the port, except for the purpose of fishing. (October, 1822.)

The land to the southward of Port St. Julian is uniform, flat, and low; it is covered by scrubby bushes, and fronted by a shingle beach. At 10 or 12 miles South of it, on approaching from the E.S.E., a small flat-topped hill may be seen over the low hills on the coast.

In the parallel of 49° 27′ S. the character of the coast changes entirely to a range of steep white clay cliffs, the average height of which was calculated, by angular measurement, to be about 300 or 330 feet. They rise like a wall from the sea, which, at high water, nearly washes their base; but, at low water, they are fronted by a considerable extent of beach, partly of shingle and partly of mud. Some short rocky ledges, which break at half tide, lie off certain parts of this range, but none of the ledges extend for more than a mile from the shore. This cliffy range occasionally forms projections, but so slight as not to be perceived when passing abreast of them.

Anchorages along the coast may be taken up, with the wind off shore, at from a mile to 2 miles from the beach, in from 9 to 12 and 14 fathoms, oozy bottom. In latitude 45° 59′ the range of steep white cliffs begins gradually to diminish in height; and terminates at 9 miles farther to the southward in a low point, *Punta Rasa*, which forms the North side of the entrance of *Port Santa Cruz*.

SANTA CRUZ,—having a mount at the entrance, on the South side, in lat. 50° 8′ 30″, lon. 68° 19′ 45″. On the 24th of January, 1824, Mr. Weddell put into this place, for the purpose of converting some blubber into oil, &c.; and he then made a sketch of the harbour, which is given in his Narrative. He observes that the entrance cannot be seen at any great distance, as the land which lies behind covers it; but by the latitude it may easily be found.

The shore on the left or South side is high, while that on the right is quite low. On the South side is a reef of rocks, which show at low water; and on the North side is a shoal, almost dry at low water, which probably shifts.

The leading mark into the river is a distant bluff, which appears over the middle of the entrance, bearing N.W. by W. ½ W. After passing the points of the entrance, two indentations will be seen on the South shore, and in the second one is the best anchorage, in 5 fathoms, bottom of gravel and clay. All the North side of the river is shoal, and much of it dries at low water. The tide of flood on the coast runs to the northward, and in strong southerly winds continues to run two hours after the time of high water by the shore.

Captain King's description is more in detail, as follows:—

The appearance of the coast about the entrance of the River of Santa Cruz is very remarkable, and easy to be known from the manner in which it makes when seen from the northward; and is even more conspicuous when seen from the southward. From the latter direction a coast line of cliffs and downs, of considerable height, is seen extending to the southward of the entrance, as far as the eye can reach, and terminating abruptly to the northward in a high, steep, flat-topped cliff, *Mount Entrance*, of which the upper part descends vertically, the lower slopes off, and appears to be united with some very low land, which may be seen extending (according to the distance off) two or three points of the compass to the northward of it. Mount Entrance is situate as already shown, and is, by angular measurement, 356 feet in height.

CAPE VIRGINS.—This cape is a steep cliff, about 300 feet high, in lat. 52° 18′ 35″, lon. 68° 17′ 30″. It is the southern extremity of the Patagonian coast, and the North side of the entrance of the Strait of Magalhaen. From the South side of the River Gallegos the coast towards the Virgins' Cape trends in a south-easterly direction, and for the first half of the distance is so low and shelving as not to be visible at a few leagues off. The cape, as before stated, is much like Cape Fairweather. *Captain King* says (*Narrative, &c.*, Vol. I., p. 7):—"At daylight the land was in sight, terminating in a point to the S.W., so exactly like the descriptions of Cape Virgins, and the view of it in Anson's voyage, that without considering our place on the chart, or calculating the previous twenty-four hours' run, it was taken for the cape itself; and no one, suspecting a mistake, thought of verifying the ship's position. The point, however, proved to be Cape Fairweather. It was not a little singular that the same mistake should have been made on board the *Beagle*, where the error was not discovered for three days. A similar error was made by one of the ships of the fleet under Loyosa in 1525."

The marks in clear weather, by which it may be known, are the Friars and other hills before mentioned; and in thick weather the soundings, on approaching, will be a certain guide; for at the distance of 4 miles off no more than 4 fathoms will be found, whereas at that distance from the Virgins' Cape the depth is much greater. It is also to be noted that the bottom to the North of Cape Fairweather is of mud, while that to the North of the Virgins' Cape is of gravel or coarse sand, and the latter has a long, low point of shingle extending from it nearly 5 miles S.W.; and lastly, if the weather be clear, the distant land of Tierra del Fuego will be visible to the S.S.W.

At 18 miles to the southward of Cape Fairweather cliffs commence, which extend thence to the Virgins' Cape, with the exception of one or two breaks only; in one of these, 8 miles North from the Virgins' Cape, there may be landing for a boat. There is good anchorage, generally, all along the coast, at from 2 to 5 miles off shore; but the bottom is rather stony, and may injure hempen cables. As the cape is approached, the ground becomes more foul.

STRAIT of MAGALHAENS.—At the distance of 5½ miles to the south-westward of the Virgins' Cape is a low, shingly point, now called *Dungeness;* and at 20 miles westward from Dungeness is the cliff, 300 feet in height, called *Cape Possession.* The last forms the eastern side of a shoal bay, which, under the name of *Possession Bay*, extends thence 7½ leagues to the westward, where the *First Narrow* of the strait commences. The latitude of the middle of Cape Possession, as given by Captain King, is 52° 16′ 35″; the longitude we assume as 68° 56′ 30″.

In rounding the Virgins' Cape, H.M.S. *Adventure* passed at 1½ miles from it, sounding in 8 fathoms, stones; and then, standing to the South, crossed a bank of gravel, sounding regularly in 7 fathoms, until Dungeness Point bore S.W. by W., when the water deepened.

Captain King says:—In rounding the cape, unless the wind be easterly or southerly, I should recommend a ship to pass within 1½ miles of it, and steer S. by E. (*by compass*), until Dungeness bears S.W.; then to edge away around the latter point, and afterward the coast is clear to Cape Possession. In moderate weather ships may anchor anywhere between Dungeness and Cape Possession. The bottom is of good holding ground, and quite clean. At from 3 to 5 miles from the coast the depth will be from 15 to 20 fathoms. (See, further, Captain King's Directions for the Strait, pp. 20—84.)

Captain King says, "The advantage which a ship will derive from passing through the Strait of Magalhaens, *from the Pacific to the Atlantic*, for there must be some great one to induce the seaman to entangle his ship with the land when fair winds and an open sea are before him, is very great. After passing through the strait, the prevailing winds being westerly, and more frequently from the northward than from the southward of West, they are fair for his running up the coast; or if not, the ship is not liable to receive much injury from the sea, which is comparatively smooth; whereas, to a ship passing round the Horn, if the wind be N.W., she must go the eastward of the Falkland Islands, and be exposed to strong gales and a heavy beam sea, and hug the wind to make her northing. To a small vessel the advantage is incalculable; for besides filling her hold with wood and water, she is enabled to escape the severe weather that so constantly reigns in the high latitudes of the South Atlantic Ocean."*

---

* Captain King's "Sailing Directions for the Coasts of Eastern and Western Patagonia," *1832, page 146.*

The valuable Survey of the Strait and its various Channels, made by Captain King and Captain FitzRoy, 1826, 1830, will, however, in an eminent degree facilitate the navigation through the Strait, both from the Atlantic and the Pacific Oceans. Captain King has justly observed, that no chart had previously existed in which much confidence could be placed; but by the present survey the navigation through it, independent of wind and weather, has been rendered much easier; since a correct delineation of its shores, and plans of the anchorages, have been made; and sufficient descriptions of them have been given to assure the navigator of his place, and furnish him with advice as to his proceedings. "The local difficulties, therefore, have been removed; but there remain much more serious ones, which I would not recommend to a large, nor even any but a very active and fast sailing, square-rigged vessel to encounter, unless detention be not an object of importance."*

The following extract from the journal of an officer of H.M.S. *Briton*, September and October, 1824, may serve as matter of precaution to those bound from La Plata to and beyond Cape Horn, and may be compared with what has been said on this subject in a former part of this work, pp. 56—65.

"In leaving the River Plata, 30th September, 1824, for the Pacific, we had S.W. winds, which carried us to the south-eastward, and we were sixteen days before we were to the westward of 56° W., and in lat. 58° 30′; consequently we were obliged to go as far as 60° 52′ S., in lon. 65°, before we got a single slant of wind, and we experienced a strong north-easterly current against us, the wind hanging from the westward until we got into lon. 82° by chronometer, and 92° 30′ by dead reckoning. The lat., 58°. The thermometer sometimes as low as 21°, with frost, snow, and hail; but we met with only one small piece of ice.

"We now are of opinion that, on coming out of the river, we should have done better by keeping inshore at first, even by beating, and have kept *within* the Falkland Islands.

"It seems to be the opinion of masters of merchant vessels, who trade constantly between Buenos Ayres and the Pacific, that time is gained, and much bad weather avoided, by keeping along shore, and even within soundings, and never to go to the eastward of the Falkland Islands, if possible to avoid it, but to keep inshore to Cape Horn."

We may here observe that in our "DIRECTORY FOR THE NAVIGATION OF THE PACIFIC OCEAN," Vol. I., pp. 1—38, will be found a lengthened description of the shores and harbours of the Strait of Magalhaens.

X.—THE COAST OF TIERRA DEL FUEGO TO CAPE HORN, ETC., INCLUDING STATEN ISLAND.

TIERRA or TERRA DEL FUEGO has been repeatedly described by different navigators. It is a dreary country, distinguished by craggy mountains and barren isles. The inhabitants, wholly uncivilized, subsist on the flesh of seals and other gross substances: their dwellings are tents, rudely formed with poles, and covered with skins, or the bark of trees. A chain of stupendous rocks, extending through the great part of the country, is continually covered with snow.

---

* Captain King's Directions, page 142.

But Captain Morrell, who passed through this strait more than once, says that its navigation is not difficult, and many good harbours are to be found, with anchorage under either shore, all the way through; the bottom generally good holding ground. Within the strait the wind never blows fresh from N.N.E. round by the eastward to S.E. by E., consequently a shelter from these points is unnecessary. Wood and water can be procured with ease; fish may be caught in great abundance; and antiscorbutic vegetables are found on both shores. Violent gales are never experienced from any quarter; the passage through seemed perfectly safe for vessels of any size, and the navigation pleasant and easy. Captain Morrell adds—

Ships bound through the strait may run day and night by keeping the North shore on board, until they come up with Indian Sound (or lon. 72° 20′), and then keeping the South shore on board until they reach Cape Pillar, at the West entrance, on the Pacific coast. Thus they will have the advantage of the prevailing winds, and keep smooth water.

Captain Morrell's descriptions of his excursions into the Patagonian country, among the natives, and of its valuable products, are highly interesting.

The habits and manners of the Fuegians are described by Captain Weddell, in his *Narrative*, pages 148 to 156, &c.; and the writer says:—I would willingly, for the honour of human nature, raise these neglected people somewhat higher in the scale of intellectual estimation than they have reached; but I must acknowledge their condition to be that of the lowest of mankind. At this age of the world it appears almost incredible, and certainly disgraceful, that there should still exist such a tractable people in almost pristine ignorance. These inhabitants have been spoken of as if they were beings possessed of little more than animal instinct, and incapable of instruction; but the captain adds, that he found them not only tractable and inoffensive, but also, in many of their employments, active, ingenious, and certainly capable of improvement by intercourse with strangers.

The stature of the people is generally low: but the contour of their faces, and the form of their heads, are those which are found to be peculiar to most Indians: they have flat noses, small eyes, full and well formed chests, small arms, legs small and ill-shaped. The women are better featured than the men. The only clothing the male wears is a skin over their shoulders, reaching a little more than halfway down the back; some have not even this sorry garment. The women have generally a larger skin over their shoulders, and are, in other respects, clothed as decency requires; and even the youngest of their female children have the same covering, which evinces a degree of modesty seldom found amongst untutored people.

The STRAIT of LE MAIRE, between Tierra del Fuego and Staten Island, was so named from the navigator who discovered it in 1616. It is said, in the relation of Anson's Voyage, that it is difficult to determine exactly where the strait lies, though the appearance of Tierra del Fuego be well known, without knowing also the appearance of Staten Land; and that some navigators have been deceived by three hills on Staten Island, which have been mistaken for the *Three Brothers* on Tierra del Fuego, and so overshot the strait. But Captain Cook says no ship can possibly miss the strait that coasts Tierra del Fuego within sight of land, for it will then of itself be sufficiently conspicuous; and Staten Land, which forms the eastern side, will be still more manifestly distinguished, for there is no land on Tierra del Fuego like it. The Strait of Le Maire can be missed only by standing too far to the eastward, without keeping the land of Tierra del Fuego in sight; if this be done, it may be missed, however accurately the appearance of the coast of Staten Land may have been exhibited; and, if this be not done, it cannot be missed, though the appearance of that coast be not known. The entrance of the strait should not be attempted but with a fair wind and moderate weather, and upon the very beginning of the tide of flood, which happens here, at the full and change of the moon, about 1^h. It is always best to keep as near to the Tierra del Fuego shore as the winds will admit. By attending to these particulars, a ship may get quite through the strait in one tide; or, at least, to the southward of *Success Bay*, into which it would be more prudent to put, if the wind should be southerly, than to attempt the weathering of Staten Land with a wind and lee current, which may endanger her being driven on that island.*

The BAY of GOOD SUCCESS, or SUCCESS BAY, is the place within which, in the year 1769, Mr. Banks and Dr. Solander found the cold so intense, that the latter had nearly fallen a sacrifice to its severity, though in the midst of summer. Dr. Solander, who had more than once crossed the mountains which divide Sweden from Norway, well knew that extreme cold, especially when joined with fatigue, produces a torpor and sleepiness which are almost irresistible: he therefore conjured the company to keep moving, whatever pain it might cost them, and whatever relief might be promised by an inclination to rest: "Whoever sits down," says he, "will sleep; and whoever sleeps, will wake no more." The doctor, who gave this advice, was the first who yielded to the sensation which he had described; but, by exertion, he was saved: two other persons perished.

Good Success Bay is an excellent anchorage for vessels of any size to stop in for wood or water; but it would not answer if a vessel required to lie steady for repair, as a swell frequently rolls in. It is quite safe; yet in the winter season, when easterly gales are common, no vessel should anchor so near the head of the bay as she might in summer; for heavy rollers at times (though rarely) set in. Fish we did not try to get, not having any spare time, and only a few birds were shot.

---

* Cook's First Voyage, dated 16th January, 1769. If we may judge from the varying descriptions, we may suppose that the climate has really ameliorated since 1769. Similar remarks have been made with regard to the Falkland Islands, as shown in pages 12 and 147.

The soundings are tolerably regular, and may give notice of an approach to Staten Land, or to the N.E. coast, and may guide a ship to the fairway of the Strait; but I should not place much confidence in them, near such a rocky coast as that of Staten Land.

STATEN ISLAND, which was surveyed in 1828 by Lieut. E. N. Kendall, of H.M.S. *Chanticleer*, is 38 miles in extent from Cape St. John to the E.N.E., and Cape St. Bartholomew to the W.S.W. The island is described as extremely mountainous and rugged, being composed of a series of lofty precipitous hills (2,000 feet and some 3,000 feet in height), clothed nearly to their snowy tops with forests of evergreen beech trees, the laurel like winter's bark, and the holly-leaved barberry: these are all evergeens; besides, there are a host of minor plants. The low ground is extremely swampy and boggy, in many parts a perfect quagmire. The writer of this description says, that the cold of these regions is a fable, and at variance with truth and nature. At Cape Horn, in lat. 56° S., vegetation was in full vigour in May, or the November of their year, and snow rarely lies upon the low grounds. In fact, we have sufficient matter to elucidate the climate of the South, and to establish its comparative mildness with the North, especially if America be taken as the example. The summers of the South are by no means warm or hot, nor winters cold; but to compensate for this, it is the region of wind, storms, and rains, perpetual gales, and eternal rains: never twenty-four hours without rain. It is the court of Eolus. The barometric pressure low, the mean being 29.32 inches,—magnetic intensity low,—the winds almost westerly,—electric phenomena extremely rare. These are the outlines of the climate, to which great attention was paid on board the *Chanticleer*, with the best possible instruments.

Mr. Webster's description of the climate of Staten Island and Tierra del Fuego, with those of Captains Monteith and FitzRoy, have been already given in the present work, pages 7, 8, 9. Captain Morrell, on passing between Queen Catharine's Foreland and Cape St. Sebastian,—the latter in lat. 53° 26′, lon. 67° 57′,—remarks that thick and wet weather is very uncommon on that part of the coast. The Cape of St. Inez is in lat. 54° 8′, lon. 66° 57′ 45″, and is a very remarkable part of the coast, from the appearance of a table land, which is commonly made by those bound round to Cape Horn. Between Cape St. Sebastian and Cape St. Inez the shore is generally rocky, and dangerous to approach in the night.

The *eastern extremity of Tierra del Fuego*, on the western side of the Strait of Le Maire, are the Capes of *St. Vincent*, of *St. Diego*, and *Good Success;* and near the middle of the Strait, between the Capes of St. Diego and Good Success, is *Success Bay*, which has been already mentioned. Cape St. Diego, the north-easternmost of the three capes, lies in lat. 54° 40′ 35″, lon. 65° 2½′. It is low, but a ship may go close to it. There are shoaler soundings toward the East, for about 2 miles, than in other parts hereabout; for a rocky ledge, under water, seems to project from the cape. On this ledge are overfalls, strong eddies, and a violent race of tide when the wind is opposed to it, which is dangerous to small vessels.

Cape St. Vincent, to the westward of Cape St. Diego, is a rocky point with low bluffs above it. Between it and Cape St. Diego is *Thetis Bay*, a tolerable anchorage during West and southerly winds, though the bottom is rocky in many places. Between the heads the tides run with great strength; therefore a ship should anchor off a green bluff at the West side, and within the line of the heads, where she will have from 6 to 12 fathoms of water, over a coarse sandy bottom, mixed with patches of rock.

Beyond Cape St. Vincent the land trends to the West and N.W.; it is rather low near the sea, but within are many hills, partially covered with wood. Regular soundings extend to seaward for many leagues; and good anchorage may be found near the land, on any part of this coast during westerly winds.

The *Jaseur Reef*, on the eastern side of the Strait, about 3 miles West from the Middle Cape of Staten Island, will be noticed hereafter.

STRAIT of LE MAIRE.—The *Cape of Good Success*, in lat. 54° 55′, is the S.E. point of Tierra del Fuego. It is high and bluff, and some rocks lie close to it, above water. To the W.N.W. of it is the *Campana*, or *Bell Mountain*, which is seen far off at sea, from the North as well as from the South; it is high, and takes its name from its resemblance to a large bell.

Rather more than 2 miles north-eastward of Cape Success is a projecting headland, which at first appears to be the Cape; two rocky islets show themselves close to it, and, from a distance, appear like a ship under sail. Six miles from these rocks, N. ¾ E., is *Good Success Bay*, which is visible from the northern entrance of the strait. This bay is about 2 miles wide, and extends into the land, westwardly, 2½ miles. It may be easily known by a peculiar mark or feature on its southern side, resembling a broad turnpike road extending into the country from the shore. The anchorage is good all over it, in from 4 to 12 fathoms of water, clear ground. Here a vessel lies perfectly safe, provided she does not anchor too far in toward the sandy beach at its head; for during S.E. gales a heavy swell, with dangerous rollers, sets right into the bay. Elevated lands, of about 1,200 feet above the level of the sea, surround the bay; therefore, with strong winds, it is subject to squalls, which, during westerly gales, are very violent.

Although this is an excellent stopping place for vessels of any size, in which they may find wood and water, it will not answer if a vessel requires to lie steady for repairs, as a swell frequently sets in. In the winter season, when easterly winds are common, no vessel should anchor so near the head of the bay, as she may in summer.

The EASTERN SIDE of the STRAIT of LE MAIRE, already noticed, is formed by the very irregular bays and rugged capes of Staten Island: surrounding the latter are heavy tide rips, which extend outward to a considerable distance, and render a near approach very dangerous. The *Middle Cape* lies in lat. 54° 48′ 20″, lon. 64° 42′ 30″. This, with *Cape St. Anthony*, the N.W. cape, and *Cape St. Bartholomew*, the S.W. cape, are high, bluff promontories.

The soundings in the strait are regular near the southern entrance, 70 to 30 fathoms, over a sandy bottom; toward the North the soundings diminish; and at 2 miles from Cape St. Diego are not more than 30 fathoms, over a rocky bottom. The strait is generally clear, excepting a reef discovered by Captain E. Handfield, in passing through in H.M. sloop *Jaseur*, in 1827, which lies at about 3 miles West from the Middle Cape. It appeared to be about 1½ miles in extent, and the sea broke violently on it.

The TIDES of Good Success Bay and the Strait of Le Maire are as regular and as little to be dreaded as in any part of the world where they run with strength. They will materially assist any vessel in her passage through the Strait, which is very wide, perfectly free from obstacles of any kind, and has Good Success Bay close at hand, in case wind or tide should fail. When the tide opposes the wind and swell, there is always a heavy, and for small vessels, dangerous "race" off Cape San Diego; in one spot, where the water is more shoal than elsewhere, 5 fathoms only were subsequently found at a neap flood tide; but let it be remembered, that on another day, at the top of the springs, being the day after full moon, we passed the same spot, at half flood, with the water perfectly smooth; and although strong eddies were seen in every direction, the vessel's steerage was but little affected by them. It is high water in Success Bay soon after 4ʰ p.m. on the full and change days, and low water at 10ʰ a.m. The flood tide stream begins to make to the northward about an hour after low water; and the ebb to the southward about the same time after high water. The tides rise from 6 to 8 feet perpendicularly. At Cape Pillar the turn of tide, with high water, is at noon; but along the S.W. and S.E. coast the time gradually increases to this coast. From Cape San Diego the flood tide sets North and West along the shore, from 1 knot to 3 knots each hour, as far as 20 miles along the shore, and the ebb in a contrary direction, but not so strong, except in San Vincente Bay. The flood in the Strait of Le Maire runs about 2 knots in mid-channel, more or less according to the wind, and the ebb about 1 knot an hour. Perhaps at times, when a strong spring tide is retarded in its progress by a northerly wind, there will be a dangerous over-fall off Cape San Diego, like the bores in some parts of the world. See also p. 21.

HARBOURS, &c., of STATEN ISLAND.—Off the North side of Staten Island is the group of islets called *New Year Isles*, lying between lon 64° 3′ and lon. 64° 13′, and the northernmost in lat. 54° 39½′. To the S.E. by S. [*S. by E.*] from the latter is an inlet named *New Year Harbour*, about half a mile broad, and extending 3 miles to the S.W., and having the depths of 30 to 45 and 20 fathoms. A cluster of islets lie in the entrance, and the passage in is on the eastern side. Captain Morrell says, here you may have any depth of water from 30 fathoms to 5, with a bottom of mud and sand. Its shores abound with wood and fresh water. Scale fish of various sorts may be caught with hook and line, and sea fowl shot in several directions. Fresh, green celery in its season can be had in any quantities, together with some berries of an agreeable flavour.

Next to the New Year Harbour, at half a league to the East, is *Port Cook*, a smaller inlet, wherein the late Captain Foster erected his observatory. It is surrounded by very high land, a mountain on its western side being 2,070 feet in height above the level of the sea. The entrance is very narrow, and has a depth of only 6 fathoms, but within the depth increases to 16 and 20 fathoms. Lieut. Kendall, in his memoir on Staten Island,* states that this is decidedly the harbour most eligible for a ship in want of shelter, from the considerations of its affording good anchorage at its entrance, in not too deep water, the greater regularity of the prevailing winds, and the facility of communication with the South side of the island, by means of a low isthmus separating it from *Port Vancouver*, a shoal inlet on that side.

Cape St. John is the easternmost point of Staten Island. It is high and precipitous, and a heavy tide rip extends from it 5 or 6 miles to seaward, setting at the rate of 6 miles an hour, to the N.N.E. with flood, and S.S.E. with the ebb; but the tide sets along shore, both on the North and South, from East to West, from 3½ or 4 to 2 or 2½ miles an hour. Off Cape St. Bartholomew, the S.W. point of the island, the tide-rip, with flood, sets to the S.W., 5 or 6 miles an hour. This tide-rip likewise is very heavy, and extends 5 or 6 miles to seaward.

St. John's Harbour lies within the promontory of St. John, on the West. It is free from danger, surrounded by high land, and its general depths are from 25 to 20 fathoms, decreasing toward either shore. From the entrance the harbour curves in a S.W. direction to the extent of 3½ miles, but is little more than half a mile broad. The hills of the promontory, on its eastern side, are 800 or 900 feet in height, and at its head on the S.W. is a remarkable elevation, now known as *Mount Richardson.*

Lieut. Kendall has described this harbour, and says, that it may be easily recognised at a distance by Mount Richardson. On nearing it, a remarkable cliff, like a painter's muller, appears on the eastern shore, which is high and steep. Allowance must be made, in steering, for the set of the tide, which at all times runs rapidly across the mouth of the harbour; it is, however, less sensible when within the headlands forming the N.W. bay, in which, in case of necessity, or to await the turn of the tide, an anchor may be dropped in from 20 to 30 fathoms. The mouth of the harbour is wide, having 25 fathoms in the centre, with a rock standing off at some distance from the western point, to which a berth must be given. The shores, with this exception, are bold; and immediately within the western point is a small bay, where anchorage may be had in 10 fathoms. The most sheltered situation is at the head of the harbour, distant 3 miles S.S.W. from the entrance, where any depth may be chosen between 20 and 5 fathoms, with sandy bottom, and moor with an open hawse to the S.W., from whence the gusts that come from the mountains are violent. The wind, anything to the westward of W.N.W., or even N.W. outside, will be found to draw out of the harbour on nearing its head; and if at all strong it will be impossible to beat farther, as it follows the direction imparted to it by every ravine in the hill as it passes; and, therefore, warping will be found the only means of advancement, taking care to have hands by a bower anchor ready to let go, and the cable stoppered at a short scope, in the event of the hawsers being carried away. A ship may readily heave down on a beach of sand at the head of the harbour.

Wood and water are plentiful, and easily procured; celery and wild fowl (race horse or steamer ducks, kelp and upland geese,) may also be obtained; and in the proper season, October, a good supply of penguins' eggs may be insured by having men in attendance at a *rookery* about a mile to the eastward of the harbour's mouth, whither they could walk along the eastern hills, from the vicinity of the *Painter's Muller*, and remain to collect daily the eggs as deposited, and secure them until a favourable opportunity is offered of embarking them from the foot of the cliff on which the rookery is established.

The shores of St. John's harbour are lined with kelp, which is an excellent indication of its navigable part, the border of it being almost invariably in 8 fathoms, and that close to the shore, the depth rapidly increasing toward the centre, until near the head of the harbour, where the depth gradually decreases to the beach.

Westward of Cape Colnett, or the meridian of 64° 16′, are the small harbours named *Port Parry* and *Port Hoppner;* and within New Year Isles, to the West of New Year Harbour, is another, *Port Basil Hall.* These are of inferior consideration, but have been described by Lieut. Kendall, as given in the Appendix to Mr. Webster's Narrative before noticed.

---

* Appendix to Mr. Webster's Narrative, p. 258.

To the southward of Staten Island but little amount of tide is perceptible; there is, however, a remarkable undertow, which renders it dangerous for boats to stretch across the mouths of the deep bays, as it is difficult to close again with the land, for which reason the sealers invariably follow the circuitous route of the shores.

Mr. Webster, in his copious description of the vegetable productions of Staten Island, has noticed the vast masses of seaweed which entangle the shores. The sea teems with them, especially in the rough and open bays, while they are comparatively rare in the still, sequestered creeks. Did they increase in the calm harbours as upon the rougher shores, they would be choked up; and they would form an impervious mesh of cords. But they thrive best in the boisterous element; and where it would seem impossible to obtain a hold, they there grow and gather strength to meet the storms.

Many pages might be justly devoted to the plants of the sea. Here they are gigantic in form, some being 300 feet in length; some of immense strength and sturdy stems, and becoming, as it were, oaks in the sea; others again spread their tough and leathery substance like hides, so that buckets, bowls, and cups, may readily be made of it. Some form ropes and cables to moor boats with; some yield a jelly pure and tasteless, like isinglass, far exceeding that of the *fucus crispus*, or Carrageen moss of our shores; and it is added that, amid the vast forests of seaweed, here described, multitudes of curious specimens may be obtained. See also upon this subject pages 148, 149.

FROM THE STRAIT OF LE MAIRE TO CAPE HORN, ETC.

From Cape Good Success, which has been described in page 354, the coast of Tierra del Fuego trends westward to a small bay, called *Acquirre Bay*, in lon. 65° 44′, a place fit only for temporary anchorage during northerly or westerly winds; but under *New Island*, to the S.W. from this place, good temporary anchorage during westerly winds may be obtained. To the southward of New Island is the smaller isle, called *Evout Island*, the centre of which is now represented in lat. 55° 33′, lon. 66° 41′.

The centre of a low, rocky group, called *Barneveldt Isles*, is in lat. 55° 48′ 54″, lon. 66° 40′ 20″. These are surrounded by deep water, but ships should always keep to the eastward of them, as there may be dangers, yet unknown, on the West. Nothing but a little grass grows on the larger islet.

HERMITE ISLES.—**CAPE HORN** (properly *Hoorn*) is the southernmost point or headland of a group called *Hermite Islands*. A representation of it is given on the chart. The name of these isles was imparted from that of Admiral Hermite, commander of the Dutch fleet, who visited this coast in 1624. Captain Cook, in his passage in December, 1774, brought Cape Horn to bear E. by S., and says it is known, at a distance, by a high, round hill over it. A point to the N.W. shows a surface not unlike this; but their situation alone will always distinguish the one from the other. Captain Cook gave the situation of the cape as 55° 58′ S., and 67° 13′ W., from his observations made in 1769; but he adds that his subsequent observations placed it in 67° 19′; which, it may be seen, is not so correct. On the N.W. side of the cape are two peaked rocks, like sugar-loaves, lying N.W. by N. and S.E. by S. (*by compass*) from each other. Some other straggling low rocks lie West of the cape, and one South of it, but they are all near the shore.

In the direction of E.N.E., 3 leagues from Cape Horn, is *Cape Enganno*, the *Mistaken Cape* of Captain Cook; it is a rocky point, and the southern point of the easternmost of the Hermite Isles, now distinguished by the name of *Wollaston*.* Captain Cook has said:—"In some charts Cape Horn is laid down as belonging to a small island. This was neither confirmed, nor can it be contradicted, by us; for several breakers appeared on the coast, both to the East and West of it, and the hazy weather rendered every object indistinct. The summits of some of the hills were rocky, but the sides and valleys seemed covered with a green turf, and wooded in tufts."

Captain King says that there is nothing very striking in the appearance of Cape Horn, as seen from a distance; but, in passing near it, is more remarkable, showing high black cliffs toward the South; it is about 500 feet high above the sea, in lat. 55° 58′, lon. 67° 13′.

---

* Strangers should be careful not to mistake this cape for Cape Horn; for such mistakes have occurred, as the name imports. Off the cape are several rocks, all above water, and at 2 miles to the S.E. is a cluster rising 30 or 40 feet above the sea.

One mile to the westward of Cape Horn are three rocks, generally above water, and over which the sea always breaks.

WIGWAM OR ST. MARTIN'S COVE, on the eastern side of Hermite Island, westward of Cape Horn, has been described by Captain Foster, who states that it bears from the cape W.N.W. ¾ W. [*N.W. ½ W.*] about 10 miles, and is a place of easy access with N.E., East, and S.E. winds. It is open to the East, and may be readily found by means of *Chanticleer Island*, which lies about a mile *true* East from the South head of the entrance. With westerly winds, which are adverse and prevalent, vessels should anchor off the entrance, in about 22 fathoms, and warp into the cove, where there is a convenient berth in 18 fathoms, sandy bottom, midway from either side, and about half a mile from the head of the cove. This anchorage is safe, although the gusts of wind in westerly gales, which are of frequent occurrence at all seasons of the year, rush down the sides of the mountains in various directions with impetuous violence, and may be very properly called *hurricane squalls.* They strike the ship from aloft, and have more the effect of heeling the vessel than of bringing a strain upon the anchors, which, when once imbedded in the sandy bottom, hold remarkably well, and will cost a heavy heave in weighing.

Wood and water abound in every part of the cove, but cannot always be procured, from the steepness of the shores, and the heavy swell that sometimes sets in. The water is highly coloured by the vegetable matter through which it percolates; but no other inconvenience from its use was found than that of imparting to tea a deeper colour, and somewhat unpleasant flavour. The wood was very much twisted and stinted in growth, and did not seem fit for any other purpose than fuel.

The shores of the cove are skirted with kelp, which serves to protect the boats in landing; and amongst which fish also are to be caught with a hook and line, abreast of the rills of fresh water that discharge themselves into the sea. From the natives was obtained a knowledge of this most valuable supply, by observing them in the act of fishing, which is ingenious; they have a line, and to the end is fastened a limpet, which the fish eagerly swallow, and not being able whilst in the water to disgorge it, are thereby drawn to the surface, and taken by the hand. In this manner they have been known to catch several dozen in the course of a few hours; but I am induced to believe that it is only in the summer months of these regions that supplies of so salutary a nature can be procured. The wild fowl that are most palatable consist of geese and race horses, called *steamers* by the sealers. Both sorts are well tasted, and were found agreeable. They were generally seen among the kelp in the cove about daybreak, but soon afterward would depart for their daily places of resort.

At the head of the cove, and a few feet beyond the reach of high water, spring tides, abundance of celery is to be found, as also in many other places in the cove. During two months of the latter part of the autumnal season a sufficiency was daily procured for the use of the ship's company; and although of not so luxuriant a growth as in December, it was, nevertheless, considered wholesome. Lat. 55° 51′ 20″, lon. 67° 31′. Variation, 23° 9′ East. High water, full and change, at 3^h 50′. Rise about 8 feet. It appeared that the flood came in from the southward.

DIEGO RAMIREZ, discovered in 1619. These are a cluster of great, barren rocks, 18 leagues south-westward from Cape Horn, which extend N.W. and S.E., 4 or 5 miles. The channel between is entirely clear. Position of the centre, according to Captain King, &c., lat. 56° 24′ 30″, lon. 68° 37′.

There are three principal isles, and many rocks above water. An appearance of them is given on our chart. The centre isle is the largest; it has tussac upon it, but neither wood nor water, and is frequented by various oceanic birds. The second in size has a shingle beach, where a boat may be hauled up in safety; and there is enough good water on the East side of the same island to supply 30 men. A furious surf breaks on the West shore, and sends a spray over the whole island. There is no sheltered anchorage for a vessel. The westernmost rock is the highest, and is surrounded by several small rocks, sufficiently elevated for birds and seals. Around the rocks the water is bold within a cable's length; and in clear weather a ship may safely run for them in the night, by keeping a good look-out. The highest point is about 200 feet above the sea. They are quite similar to the Ildefonsos; the top of a ridge of hills showing above the water, and broken through by the sea.

On the East side is a depth of 30 fathoms, with a bottom of fine green sand. The tide of flood here runs to the N.E., and apparently to the eastward, among many of the main islands.

Captain Collnett says that in general the birds hereabout resemble the dun crow, common in Hampshire in the winter, and which had been seen daily from the parallel of the Falkland Islands.

ISLES of St. ILDEFONSO.—These are a group of rugged islets and rocks above water, bold-to, and within which Captain Cook passed to the eastward in December, 1774. They extend 5 miles in a N.W. and S.E. direction, are very narrow, and about 100 feet high above the level of the sea. They have been much frequented by the sealers. Their distance from the nearest point of the main is about 20 miles. *Position*, lat. 55° 51′, lon. 69° 11. The passage between them and Diego Ramirez is 35 miles wide, and entirely free from danger.

Captain Weddell says that the largest isle is not more than a quarter of a mile long. On a N.W. or S.E. bearing the whole appears as two islets only; but the northern one is merely a cluster of detached rocks; the southern islet is the largest and highest, and contains a quantity of tussac on its top, and sea gull rookeries. The isles have no beaches, and can be landed on only when the water is very smooth. Between them is a channel of a mile wide, which, being rocky, should not be used.

GENERAL REMARKS ON THE PASSAGE ALONG THE EASTERN COAST OF PATAGONIA, AND AROUND CAPE HORN, ETC. BY CAPTAIN P. P. KING, AND CAPTAIN F. W. BEECHEY, R.N.

We have already, in the present work, pages 53 to 67, given the instructions and opinions of many eminent individuals as to the best passages and best seasons for passing Cape Horn, &c.; but as those opinions fluctuate, it cannot be deemed superfluous to produce, if possible, an ultimate decision of this very important topic, and we therefore now add, for that purpose, first, the General Remarks of Captain King, 1826—1830; and secondly, those of Captain Beechey, 1825—1828.

Captain King, in his Remarks upon the Passage round Cape Horn, &c., has said:—Ships bound from the Atlantic to any of the ports in the Pacific will find it advantageous to keep within 100 miles of the coast of Eastern Patagonia, as well to avoid the heavy sea that is raised by the westerly gales, which prevail to the eastward, and increase in strength according to the distance from the land, as to profit by the variableness of the wind when fixed in the western board.* Near the coast, from April to September, when the sun has North declination, the winds prevail more from the W.N.W. to N.N.W. than from any other quarter. Easterly gales are of very rare occurrence; but even when they do blow, the direction being obliquely upon the coast, I do not consider it at all hazardous to keep the land on board. In the opposite season, when the sun has South declination, the winds will incline from the southward of West, and frequently blow hard; but as the coast is a weather shore, the sea goes down immediately after the gale. In this season, although the winds are generally against a ship's making quick progress, yet, as they seldom remain fixed in one point, and frequently shift backward and forward six or eight points in as many hours, advantage may be taken of the change, so as to keep close in with the coast.

Having once made the land, which should be done to the southward of Cape Blanco, it will be beneficial to keep it topping on the horizon until the entrance of the Strait of Magalhaens be passed.

With respect to this part of the voyage, whether to pass through Strait Le Maire, or round Staten Island, much difference of opinion exists. Prudence, I think, suggests the latter; yet I should very reluctantly give up the opportunity that might offer of clearing the strait, and therefore of being so much more to windward. With a southerly wind it would not be advisable to attempt the strait; for with a weather tide the sea runs very cross and deep, and might severely injure and endanger the safety of a small vessel, and to a large one do much damage. In calm weather it would be still more imprudent (unless the western side of the strait could be reached, where a ship might anchor), on account of the tides setting over to the Staten Island side; where, if it becomes necessary to anchor, it would necessarily be in very deep water, and close to the land. With a northerly wind the route seems not only practicable, but very advantageous; and it would require some resolution to give up the opportunity so invitingly offered. I doubt whether northerly winds, unless they are very strong, blow through the strait; if not, a ship is drifted over to the eastern shores, where, from the force of the tides, she would be quite unmanageable.

---

* *To these winds may be attributable the* ***Southern Connecting Current,*** *described in page 33.—ED.*

Captain FitzRoy, whose authority, from his experience, must be very good, seems to think that there is neither risk nor difficulty in passing the strait. The only danger that does exist, and that may be an imaginary one, is the failure of the wind. Ships passing through it from the South are not so liable to the failure of the south-westerly wind, unless it be light, and then it will probably be from the N.W., at the northern end of the strait. The anchorage in Good Success Bay, however, is admirably situated, should the wind or tide fail.

In passing to leeward of Staten Island, the tide race, which extends for some distance off Cape St. John, at the N.E. end of the island, must be avoided; otherwise there exist no dangers.

The anchorage under New Year Islands, although it is a wild one and the bottom bad, and the tide very strong, yet offers good shelter from S.W. winds, and may be occupied with advantage during the existence of a gale from that quarter, since it is unfavourable for ships bound round the Horn.

After passing Staten Island, if the wind be westerly, the ship should be kept upon the starboard tack, unless it veers to the southward of S.S.W., until she reaches the latitude of 60° S., and then upon that tack upon which most westing may be made. In this parallel, however, the wind is thought to prevail more from the eastward than from any other quarter. Never having passed round Cape Horn in the summer season, I may not perhaps be justified in opposing my opinion to that of others, who, having tried both seasons, give the preference to the summer months. The advantage of long days is certainly very great; but from my experience of the wind and weather, during the opposite seasons, at Port Famine, I preferred the winter passage, and in our subsequent experience of it found no reason to alter my opinion. Easterly and northerly winds prevail in the winter off the cape, whilst southerly and westerly winds are constant during the summer months; and not only are the winds more favourable in the winter, but they are moderate in comparison to the fury of the summer gales.

Having passed the meridian of Cape Pillar, it will yet be advisable to take every opportunity of making westing in preference to northing until reaching the meridian of 82° or 84°, which will enable a ship to steer through the north-westerly winds that prevail between the parallels of 50° and 54°.—*Captain King's Directions*, pp. 138—140.

Passages of the Blossom, Captain, now Rear Admiral, Beechey.

We have given, in our preceding page 314, Captain Beechey's description of the *Pamperos* and other winds which he experienced between Rio Janeiro and the Falkland Islands, to the East of the latter. Captain B. adds, in continuation:—As we neared the land, the wind died away. The barometer was low, standing at 28,6, and the weather was misty, with drizzling rain at times. About 1^h p.m. on the 9th of September (1825), the mist began to disperse, and a bright yellow sky was seen under an arch to the S.W.; the wind at the same time inclined that way, and in less than an hour we were under close-reefed topsails and storm staysails. This gale lasted about eighteen hours, and then veered to the W. by N. and West, with which we advanced to the parallel of Cape St. John. Here we encountered strong S.W. winds with long heavy seas, and stretched to the southward to 58° 2′ S., *regretting that we had not passed inside the Falkland Islands;* as in that case we should have been nearly a day's run farther to the westward before we encountered these adverse winds. After two days the wind veered to S.S.W., and blew hard, but the sea was not high. We now stood to the N.W.; and on the 17th, in lat. 56° 21′ S., lon. 61° 51′ W., had a few hours calm. This was succeeded by a breeze from the southward, and continued moderate with fine weather and a smooth sea; and the next day, having carried us 123 miles, we made Cape Horn, 14 miles distant on the lee beam, bearing N. 2° W. *true;* the wind still from the southward.

Between Cape Horn and Diego Ramirez we had soundings, with 45 fathoms rock and

60 fathoms sand; and afterward from 84 to 60 fathoms gravel, coarse and fine sand, and some coral. That night we passed to the northward of Diego Ramirez at 9 miles distant, not having less than 60 fathoms on a bottom of coarse sand. The following morning the Isles of Ildefonso bore N. 5° W. *true*, 9 miles, and we had 73 fathoms, fine sand; and at noon York Minster, at the entrance of Christmas Sound, bore N. 37° E. *true*, 19 miles; 82 fathoms, coral and stones. Not liking to range the shores of Tierra del Fuego so close during the night with a southerly wind, we tacked; and with the wind still at S.S.W. stood for thirty-six hours to the S.E. into the meridian of Diego Ramirez; and when 36 miles South of it we again kept W. by S., with the wind at S. by W. We stood on, and had light winds, fine weather, and a smooth sea, until the 24th, when there was a calm for twelve hours, with a little swell from N.E. On the 25th, early, we got a north-easterly wind, which commenced with fine weather and smooth water; and at noon, on the 26th, carried us to the 79th meridian and 53rd parallel of latitude, when we considered ourselves round the Horn. In this situation we were 143 miles West of Cape Pillar; having numbered exactly fourteen days from the time at which we were due East of Staten Land. We passed Cape Horn on one Sunday, and on the following crossed the meridian of Cape Pillar. Our greatest South latitude in the whole passage was 58° 2′. The gales of wind which we experienced were attended with a long swell, that by no means strained the ship, and we did not see a particle of floating ice.

With regard to the best time of the year for rounding Cape Horn, there is a great difference of opinion, as in the same months both good and bad passages have been made: but I should certainly not select the winter time, if I had my choice. Independent of the cold, which, during gales of wind, is severely felt by a ship's company necessarily wet and exposed, and the probability of meeting with floating islands of ice, surely the long nights, as Captain Hall has justly observed, must augment, in a serious degree, the difficulties of the navigation.

From the passage of the *Blossom*, a preference might be given to the month of September; but in the very same month, Captain Falcon, in the *Tyne*, had a long and boisterous passage. I concur in opinion with Cook, Pérouse, Krusenstern, and others, in thinking there is no necessity whatever for going far to the southward; and I should recommend always standing on that tack which gained most longitude, without paying any regard to latitude, further than taking care to keep South (say a degree) of Cape Horn. With a N.W. wind I would stand S.W., and with a S.W. wind N.W., and so on. If there were a doubt, I should give the preference to the southern tack, unless far advanced in that direction. We did not find the strongest winds near the land, but on the contrary; and I am of opinion that here, as is the case in many other places, they do not blow home; and that within 30 miles of the land the sea is broken by the inequality of the bottom. There is, however, great objection to nearing the land eastward of Cape Horn, in consequence of the velocity with which the current sets through the Strait of Le Maire, particularly with a southerly wind. This does not obtain to the westward of Diego Ramirez, in which direction I see no objection to approaching the coast within 40 or 60 miles. Cook ranged this shore very close in December; and on more than one occasion found the current setting off-shore, and at other times slowly along to the S.E.

In the first part of this passage the currents ran to the N.W.; but after passing the latitude of 40° S., they set to the eastward; and when we arrived off Cape Horn the ship was S. 40° E. 116 miles of her reckoning.

While we were in the neighbourhood of Diego Ramirez there was little or no current, but to the westward it ran to the W.N.W. It however soon after changed; and, on our arrival off Concepcion, the whole amount of current was N. 49° E. 147 miles. In rounding Tierra del Fuego with a southerly wind, full 4 points must be allowed for variation and current. For in this high latitude there will, in most ships, be found 10 or 12 degrees more variation with the head West than East; and though the true variation be but 24° E., at least 29° or 30° must be allowed going westward.

We found the barometer in this passage an invaluable instrument; upon no occasion did it deceive us. In passing these latitudes my attention was drawn to the changes in the temperature of the water, which I usually found to precede a shift of wind from South to North, and *vice versâ*, even before that of the temperature of the air. I subjoin a short statement of these changes for the satisfaction of such as may feel interested in them.

On the 29th of August, at 8^h a.m., the temperature of the surface was 58°, the weather moderate and cloudy, and the wind W.N.W.; from this time to midnight it gradually fell, until it stood at 48°. The wind now increased, and the next morning shifted to S.W. and S.S.W., and blew fresh gales: the breeze continuing, on the 31st the temperature of the surface underwent a further fall of 3½°; and we had hard squalls, with hail and sleet. It afterward fluctuated four days between 46° and 49½°, during which time the winds were variable from S.S.W. to N.W. by N. and E.N.E.; the weather for the most part moderate and cloudy: but on the 5th (September) the temperature (always alluding to that of the surface of the sea) rose to 53°, and the wind came from N.E. by N. and North, but light. The next day it shifted to S.E. by S., and the temperature rather decreased, but the breezes were light. On the afternoon of the 7th, after a calm, during which it remained at 50°, there was a decrease of 8°; and 36 hours after, a gale from S. by E. suddenly arose. During the five following days it was nearly stationary, at the temperature of 39⅓°, and the wind was variable from W.N.W., S.W., and West, blowing hard. From noon on the 12th, to 4^h a.m. on the 13th, it fell to 36°, and that night we had a gale at W. by S., which continued all the next day. At night there was a further decrease of 4°, when the wind veered to S. by W., and blew strong gales. The temperature kept down at 35° until midnight of the 15th, when it rose 5°; and the 16th, at 4^h a.m., the wind changed to W.N.W. and N.W. by W. The temperature, however, soon decreased again 4°; and at 9^h a.m. the following day, the wind came from S.W. by S. and S.S.E., where it continued, and the temperature remained nearly stationary until we made Cape Horn, when it rose to 42°.

It would, perhaps, be too hazardous to assert, upon such short experience, that these changes are the forerunners of shifts of wind, though I found similar variations attend the southerly gales of Spitzbergen, where we had always indications of their approach by the increase of the temperature of the sea. I am, however, persuaded that, like the barometer, it speaks a language which, though at times not the most intelligible, may nevertheless often prove useful.

ON THE HOME PASSAGE OF THE BLOSSOM, June 22nd, 1828, the ship had an easterly wind, which veered to S.E. and drove her away to the latitude of 56° 18′ S., and longitude 75° W., when she encountered S. by E. winds, which carried her past Cape Horn on the 30th. The winds were now fair; but off the Falkland Islands they were variable, until they settled in the E.S.E. quarter. With this she advanced to 35° N., when she encountered N.E. and N.W. gales, with heavy cross seas, and then several pamperos, which were attended with vivid lightning. We afterward, says Captain Beechey, made progress to the northward, and arrived at Rio Janeiro on the 21st July.

"In this passage, which was made in the depth of winter, the greatest cold was 21°. From Cape Horn to the Falkland Islands we had thick showers of snow; and had we been bound the opposite way, I have no doubt we should have felt the weather severely. The barometer, as on the former occasion, proved an invaluable monitor. From the time we quitted Mas a Fuera until we were off Staten Land, the winds were advantageous for making the passage to the Pacific, and so far they favour the opinion of the winter time being the most desirable for this purpose. The current in this passage ran to the S.E. to the latitude of 46° S., then North 2 days, and from 48° to 57° S., between N.W. and S.W., at the rate of 13 miles a day. From 57° S., and longitude 68° W., they ran to the N.E., until we had passed the cape, and then westerly and north-westerly to the Falkland Islands. Off the River Plata they ran to the S.W. and South. On our arrival at Rio Janeiro the whole effect of the current from Coquimbo was S. 62° W. 82 miles."

From the experience of these two passages round the Horn, I am of opinion that a ship bound to the Pacific should pass inside the Falkland Islands and round Staten Land, as closely as possible; as she will most likely encounter S.W. winds directly the Pacific is open. A N.W. wind off the Falklands will, I think, generally veer to West and S.W. on approaching Staten Land. With S.W. winds off Staten Land, nothing is left of course but to stand to the southward. I should not, however, recommend keeping this board longer than to get an offing, except westing was to be made by it; and if not, I would go about directly a mile of longitude was to be gained on the in-shore tack; avoiding, however, a near approach to Tierra del Fuego, eastward of Cape Horn, on account of the north-east set through Strait Le Maire, with southerly winds. I see no good reason for going to a high southern latitude, if it can be avoided without loss of longitude. With regard to the fact, that gales of wind are stronger near the land, I own I cannot concur in such an opinion. On a comparison of the Blossom's passage out with that of a brig commanded by a Lieutenant Parker, which rounded the Horn at the same time, it appeared, that whilst she was experiencing strong winds and heavy seas, which washed away some of her boats, the *Blossom*, close in with the land, had fine moderate weather, and no other indication of the gales the *Hellespont* was encountering than by a long southerly swell setting upon the shore; and that the *Blossom* had the advantage of a westerly current, while the brig was put back 20 miles daily by one in the opposite direction.

With regard to passing inside or outside the Falkland Islands, I think the latter preferable, especially in winter, as the winds sometimes hang in the eastern quarter at that period, and are apt to run a ship in with the River Plata.

From the Falkland Islands to Rio Janeiro the winds are very uncertain. Ships may, however, generally reckon upon encountering, at least, one pampero, between 33° and 27° N.,* and on meeting with northerly or north-north-easterly winds, when within 200 or 300 miles of Cape Frio. It is better, in the latter instance, to stand out to the eastward in preference to the other tack, as it will almost always happen that they will there meet an easterly wind to carry them up to the cape. It has been found very difficult to get up near the shore from Isla Grande and St. Catharine's.—*Captain Beechey's Appendix*, pp. 632, 633, 634.

The navigation around Cape Horn, and on the western coast of America, as well as of the whole of the Pacific Ocean, *will be* found in the DIRECTORY FOR THE NAVIGATION OF THE PACIFIC OCEAN, in 2 volumes. Part I., containing descriptions, &c., of its coasts; Part II. of its islands, winds, tides, currents, sailing directions, &c.

SECTION VII.

THE COASTS OF AFRICA, FROM CAPE MOUNT TO CAPE LOPEZ, INCLUDING THE ISLANDS OF FERNANDO PO, PRINCES, ST. THOMAS, AND ANNO BON.

I.—GENERAL DESCRIPTION AND DIRECTIONS.

IN our book for the Atlantic Ocean, we have given a description of, and directions for, the African coast, from the Strait of Gibraltar to the River Gallinas, or Galinhas; our present object is, therefore, to give a similar description of, and directions for, the coasts and harbours between Cape Mount and the Cape of Good Hope; and, as a farther acceptable addition, a continued description of the coast to Algoa Bay, &c. These we divide under two general heads; the first, from Cape Mount to Cape Lopez; and the second, from Cape Lopez to the Cape of Good Hope, &c.

The WINDWARD COAST, with which we commence our description, comprehends all the coast from *Cape Mount*, 15 leagues westward of Cape Mesurado, to the country in the vicinity of Cape Lahou, nearly 2½° westward of Cape Three Points, where the GOLD COAST begins. The Windward Coast includes the three particular coasts called the *Grain Coast*, or *Malagette Pepper Coast;* the *Ivory*, or *Teeth Coast;* and the coast of *Adou*, or *Quaquas*.

The GOLD COAST extends eastward to the RIVER VOLTA. The interior, to the northward, comprises the kingdoms of Ashantee, &c. Beyond these, farther eastward, are the kingdoms of DAHOMEY, BENIN, and WARREE, extending, on the coast, from the River Volta to Cape Formosa. Thence follows the BIGHT OF BIAFRA, from Cape

---

* These winds appear to be of frequent occurrence off the River Plata; they are generally preceded by strong N.W. winds, and a low altitude of the barometer. Care is necessary to avoid being taken aback by the wind shifting suddenly to the S.W., which it sometimes does after a heavy squall. In deep laden ships it would be prudent to lie with the head to the N.E., as they would then bow the sea, which often runs very high on the shift of wind; *whereas on the other tack they would have their stern exposed to it.—Original Note.*

Formosa to Cape Lopez, including the islands of Fernando Po, Princes, St. Thomas, and Anno Bon, all of which we include in the present section.

The NATIVES. The general and particular circumstances, habits, and customs of the people of these countries have been very copiously described by Messrs. Dalzel, Norris, Bowditch, Adams, and many other navigators;[*] and their descriptions, unhappily, are not less correct at the present day than when first written, for no melioration of principle or character has yet prevailed. They are the same slaves of the most contemptible superstitions, of the most barbarous and inhuman customs. In matters of trade, however, they commonly possess sufficient acumen; and it has been especially intimated to the European visitor that, in trading with them, punctuality is of the utmost importance; for confidence once lost by breach of contract, or unfair dealing, is not to be regained. Of their dialects Captain Adams says:[†]—The Tower of Babel might have been built on the western shores of Africa, 5° North of the Equator, and its inhabitants dispersed to the North, East, and West; for almost every tribe (and they are innumerable) has a distinct language, unintelligible to the others; and as they have not among them any written character, the different languages spoken can be learned only in those countries where they are used. The enunciation of all that I have heard spoken is soft and harmonious; the words composing them abound in vowels, and generally terminate in them. Their compound words seldom exceed four syllables; and frequently entire sentences not more. Their language is adapted to their habits and wants; and as these are extremely few and simple, and nearly similar in all, the construction of the different languages is the same.

The Kroumen are, in many respects, an extraordinary race of people; and, as mentioned above, a different language is spoken at every 10 or 12 miles, though these different languages are generally understood by the natives all along the coast. The Kroumen have a singular custom, peculiar to themselves, which is a system of apprenticeship. A number of young men will attach themselves for a certain period to a headman. This headman has made one or more voyages to leeward to the Oil Rivers, before he can obtain a name, or be allowed to build a house, or to trade; and it is the duty of this headman to ship the boys off for the Oil Rivers on board of any vessel he can; and for this service the headman is entitled to the one month's advance always paid by the ship: he is also entitled to a certain portion of the boy's wages on his return. When the boy has made two or three voyages, and can speak English fluently, he becomes a headman himself.

The language of the Kroumen is principally a combination of vowels; and, from the peculiar nasal pronunciation, can rarely be acquired by Europeans. The Krouman is generally found faithful in a strange country, but must not be trusted in his own. Their national mark is an arrow on each temple, the point toward the eye.

In proportion as the vessel advances to the eastward, the natives will be found more barbarous, and consequently more treacherous; and about Drewin and St. Andrews they were formerly a fierce, unruly, and sanguinary race, notorious for their treachery and repeated attacks upon vessels. I have had no intercourse with these people for the last seven or eight years; but I am assured that their condition and manners is very much improved, and that small vessels may now trade there for ivory and palm oil in perfect safety, by adopting only common precautions. The St. Andrews people have been repeatedly fired upon by the crews of different vessels, for their various acts of theft and treachery; and it was formerly very unsafe to allow more than five or six of them upon deck at once, as they generally came on board armed with a long knife, in the use of which they were very dexterous. Upon one occasion I very suddenly dispersed a multitude of them off the deck, upon the very point of open warfare, by merely throwing about a dozen heads of leaf tobacco over the side, for they all immediately jumped overboard after it. Upon another occasion, the plentiful distribution of boiling water amongst them proved quite as efficacious. On board a French barque, where two of the crew had been wounded by the knives of the natives, they were beaten off with empty glass bottles, a large quantity of which happened to be on deck at the time. Harsh as these measures may appear, they are surely better and more humane than the use of cutlasses and muskets.

---

[*] In a subsequent page, we have alluded to an excellent paper on the Ethnography of Akkrah, &c., by *W. F. Daniell, Esq., M.D.*, F.R.G.S., F.E.S. The interesting work, by the same author, entitled "Sketches of the Medical Topography and Native Diseases of the Gulf of Guinea, Western Africa," 1849, contains many details on the same subject.

[†] Captain John Adams, in his "*Sketches taken during Ten Voyages to Africa, between the Years* 1786 *and* 1800, with an Appendix on the European Trade, &c." 8vo., no date.

The natives of Cape Lahou in many respects resemble the Kroumen in their manners and disposition, and, like them, are almost amphibious. Cape Lahou may be considered as the western extremity of civilization on this part of the coast of Africa, for the Gold Coast may be here said to commence.—*Captain Midgley.*

CLIMATE, &c.—The extreme unhealthiness of Western Africa to the European constitution arises from its moist and hot atmosphere, impregnated, as it commonly is, with the miasma or malaria of the marshes; but prejudicial as it is to the European, the natives seem to enjoy good health, and to live to a tolerably old age. The wet season, however, like the winter of Europe, produces inflammatory attacks of the lungs and pleura, with catarrh, or colds, &c.; and the Africans seem peculiarly sensible of the least change in the temperature of the atmosphere.*

From some recent experiments on the waters of the rivers and coasts, the details of which are given in the *Nautical Magazine* for 1841, page 20, it is shown that this unhealthiness may arise from the extraordinary presence of sulphuretted hydrogen gas in these waters. In one instance it amounted to nearly as much as that contained in the well known springs at Harrowgate, in Yorkshire, which owe their properties to the same cause. It is difficult to account for this important fact, but the deadly effects of the climate of this part of the world are very easily referrible to such a cause. It has been experimentally found that so small a mixture as a fifteen-hundredth part of sulphuretted hydrogen in the atmosphere acts as a direct poison upon small animals; and the sensations of languor and nausea described are exactly those which have been experienced by persons who have been exposed to its deleterious influence in small quantities.

The peculiar unhealthiness of mangrove swamps in all parts of the world probably arises from that tree requiring salt water for its growth, and its decaying foliage being thus brought into immediate contact with the sulphates. The hypothesis also agrees with the fact, which has been established, that the unhealthiness of such situations does not extend to any considerable distance from the sea.

What is known of the action of vegetable matter upon the sulphates, and the immense quantities of vegetable matters which must be brought by the rivers within the influence of the saline matters of the sea, renders this origin of the sulphuretted hydrogen extremely probable. The only other source from whence it could be derived would be volcanic action.

"When this matter was first brought under my consideration," continues Professor Daniell, "I was surprised that the nauseous smell which must be necessarily evolved from water impregnated with this gas, at so high a temperature as that of the equinoctial regions, had not been noticed. I have in consequence turned to some of the accounts of the late travels in Africa, to seek for evidence upon the subject; and in the Narrative of an Expedition into the Interior of Africa, by the River Niger, by Macgregor Laird and R. A. B. Oldfield, I found the following important observations:—

"The principal predisposing causes of the awful mortality were, in my opinion, the sudden change from the open sea to a narrow and winding river, the want of the sea breeze, and the prevalence of the deadly miasma, to which we were nightly exposed from the surrounding swamps. The *horrid sickening stench* of this miasma must be experienced to be conceived: no description of it can convey to the mind the wretched sensation that is felt for some time before and after daybreak. In those accursed swamps, one is oppressed not only bodily but mentally with an indescribable feeling of heaviness, languor, nausea, and disgust, which requires a considerable effort to shake off."

Another remarkable action of the water is the injurious effect it has upon the copper sheathing of vessels; and as the same agent will produce this result, nothing is wanting to identify this rapid decay of the ships' copper with that of the mortality of the climate. Although these views are questioned by some, still there is great probability of their being correct, and it is a subject well worthy of future inquiry.†

The narratives of the ill-fated Niger expedition, as well as of every other traveller who visits those regions, will place the mariner on his guard as to the best means of counteracting the deadly effects of the climate. In the Appendix will be found some medical hints for the preservation of health, which are recommended to attention.

---

* Adams's Sketches, page 60.

† *See also Nautical Magazine*, Nov., 1841, pp. 737-8, and *Parliamentary Report.* App.

SCRIPTIVE REMARKS AND SAILING DIRECTIONS FOR THE NAVIGATION TO ND OF WESTERN AFRICA; WITH SOME ACCOUNT OF THE CURRENTS, SEASONS, TC.; THE RESULT OF EIGHT YEARS ACTUAL EXPERIENCE, IN THE COMMAND F FOUR DIFFERENT VESSELS, BY CAPTAIN THOMAS MIDGLEY, OF LIVERPOOL, 837.*

n the PASSAGE from ENGLAND to the Western Coast of Africa, it may be well to e the Island of Madeira and sail to the westward of it if possible; for by so doing ship will be placed in the best position as to her future course. After passing Ma- a, steer so as to leave Palma about 70 or 80 miles to the eastward (if nearer, the ship able to be becalmed), and then steer a course to make the N.E. end of Bonavista.— avista requires a good berth, as the currents about it are strong and uncertain, and gers extend from the North and East sides to a great distance from the land.

n *the winter*, when strong westerly breezes, of long continuance, prevail to the north- d, it may be impossible to make Madeira without much trouble and delay; in this , endeavour to get a good observation for longitude, or a sight of the Salvages; and, ıld westerly winds still continue, run boldly to the southward. On nearing the ıary Islands, you will find the wind either gradually decrease to a calm, or it will veer he northward with heavy squalls. The squalls in this neighbourhood give little ning, but are frequently exceedingly heavy and dangerous. Any ship may very safely through the passage to the eastward of Palma, as a strong steady N.N.E. or N.E. ze almost constantly blows through it; and by keeping mid-channel, there is little of being becalmed. When clear of the Canaries, a course may be shaped to make ıavista, as above directed.

he passage between the Islands and Cape Verde is generally and very properly adopted essels trading to the Western Coast of Africa; for, by running to the westward of Antonio, they have again to make easting in that tract of sea which, lying contiguous he southern limit of the N.E. trade wind, is so often disturbed by calms, squalls, nder, lightning, and heavy rain.

he currents between the coasts of Great Britain and the Cape Verde Islands are now vell known, that it is almost superfluous to make any further remark upon them, ex- ting that their velocity is by no means exaggerated; and the dangerous effect which have upon vessels, between the Bay of Biscay and the Capes Noon and Bojador, on African coast, cannot be too strongly impressed upon the minds of those who have rge of valuable lives and property.

hose *passing Bonavista* in the months of June, July, August, and September, should be too anxious to make easting; for they will lose the trade wind very soon after sing the parallel of the Island of St. Jago, and, after a short interval of calm, fall in h the S.W. wind and its usual accompaniments of heavy squalls and rain. On the her progress the vessel makes to the southward and eastward, the S.W. winds generally ome variable to the westward, and the squalls not so frequent.

t this season of the year it is advisable to give *St. Anne's Shoals* a berth of 50 leagues he eastward, as the sea sets in so heavily upon the coast, between these shoals and pe Palmas, that making southing when near the land, in these months, is attended h much difficulty.

rom October, to April or May, the weather in this tract is generally fine, and the hts cool, beautifully serene and clear, with heavy dews; and in these months a more ct track may be pursued from Bonavista to the southward and eastward, than the one ve mentioned. In the influence of the trades, the breeze is generally steady from I.E. and N.E., and the sea smooth; occasionally, however, interrupted by tornadoes, ch, in the neighbourhood of Cape Verga and Sierra Leone, blow with terrible fury. h is their violence, that it is frequently necessary to keep the ship directly before m, under a foretopmast staysail only.

Between the Cape Verde Islands and the coast, the currents in the above tracks are iable, but mostly found running to the southward, and seldom exceeding 1 mile an ır; generally from ½ to ¾ of a mile, until hauling up for St. Anne's Shoals. At about

---

* In these Remarks, &c., by the late Captain Midgley, as in the other parts of this volume, courses and bearings are by *compass*, unless where otherwise expressed; and every bearing direction of the current is intended for the *true*.

40 leagues to the westward of these, I have several times found them setting about E.S.E. by chart, fully 1¼ miles in the hour.

The sea between the meridian of 20° W. and the Bank of Soundings extending from the African Coast, is perhaps the most luminous part of the Atlantic Ocean. In the very dark gloomy nights of the wet season, with a strong breeze of wind, and when not one solitary star is visible, nothing can exceed, no pen can describe, the awful grandeur and magnificence of the scene. The whole surface of the sea appears as one vast sheet of liquid fire; and the ship, sailing at the rate of 6 or 7 knots through the water, causes streaks of light to be emitted from the sea, that throw a strong yet sickly and appalling glare upon all the sails, creating an indescribable sensation in the mind, that is very far from being agreeable, as the vessel appears to be surrounded by breakers on every side.

Although I have several times noticed this luminous appearance in the same tract, I am led to remark more particularly upon it on account of a most awful night which I passed on the 24th of August, 1834, in or about lat. 7° 30′ N. and lon. 17° 50′ W., which left an impression upon the minds of all on board that I fancy will not be very soon effaced; for the vessel appeared to be sailing through a sea of liquid fire, whilst the heavy dark mass of clouds appeared to rest upon her mast-heads, and not a single star was visible amid the horrid gloom. No bottom was found at 120 fathoms. Temperature of the air 82°, and of the water 79° (Fahrenheit).

Vessels in want of Kroumen should call at *Grand Sestros.*—From some years' experience I can confidently say, that they are the most willing and best disposed men upon the Krou Coast; and, if well used, are faithful to their employer in every difficulty he may have to contend with to leeward. Every vessel should take four or five, or more of them, in proportion to her size: for, in the Oil Rivers, if white men are exposed in the boats or canoes, landing or taking in casks, they very soon fall victims to the climate. The Kroumen prefer rice to any other diet, and a good supply can generally be procured at a cheap rate, except between January and June; but, considering the detention of lying-to, in order to procure it, the rice may be exported from England, for ships' use, at very nearly as cheap a rate. One of the Kroumen is of more real service in the *Oil Rivers* than two Europeans; they are generally well versed in the English language; and are contented with a dash or present when left at Fernando Po, after the vessel has completed her lading.

On approaching the Krou coast it is usual to hoist the ensign and fire a gun, and the vessel will be soon surrounded by canoes. A small canoe may be purchased for the ship's use for a mere trifle, and will be found extremely serviceable in the rivers.

The navigation between Cape Lahou and the land of Formosa presents no difficulty to the navigator; the currents in the route run to the eastward at 1, 1½, and sometimes 2 knots or more, in the hour. If there be no inducement to call at Bereby, Drewin, or Cape Lahou, for ivory, it will be as well (and will certainly expedite the passage) to shape a course from Cape Palmas for Cape Three Points; and then, giving that land a berth of 5 or 6 leagues, shape a course for the land of Formosa.

In steering across the Bight of Benin, the current will be generally found running about 1 mile an hour to the N.E.; and must be allowed for, by steering one-third of a point to the southward of the direct course.

A mere inspection of the chart will show that what is erroneously called Cape Formosa is, in fact, an elbow land rounding off gradually to the eastward; and regular soundings upon a muddy bottom extend for some considerable distance to the westward and southward of it. The land is here extremely low, and should not be approached in the night nearer than in 8 or 10 fathoms, unless by a vessel prepared to anchor.

After making the land, the oldest and most experienced traders to the Oil Rivers are frequently deceived as to the position of the vessel; for the best description of the rivers from Formosa to Bonny is but vague and imperfect; and I therefore proceed to give such directions as I think, from my own experience, will be found useful to vessels bound to the Bonny or New Calabar River.

The rivers between Terra Formosa and Bonny have all shoal bars at the entrance, and generally appear from the offing to be narrow. They have no peculiar feature to distinguish them, other than their being open to such points of the compass as are expressed *in the Sailing Directions.*

SEASONS.—*The Seasons* here appear to have been imperfectly described. The rains generally commence in the latter end of May, or early in June, and gradually increase, with strong S.S.W. and S.W. breezes, during the months of July, August, and great part of September, toward the end of which month they as gradually terminate. In July and August heavy squalls frequently prevail; and in these months the wind very rarely shifts more than between S.S.W. and S.W., and the rain is incessant from sunset to nearly noon next day, when it ceases for a few hours, and again commences with more or less violence in the evening. In October the weather becomes more settled, with light land winds, and occasionally showers of rain, which, however, yield to the moderate sea breeze that sets in about ten or eleven a.m. In November the tornadoes commence, and are at first violent, gradually decreasing in strength as the *Harmattan* or *dry season* commences, although they are occasionally prevalent from this month to May. In December, January, and February, is the Harmattan season; and in these months the sea breeze sets in about noon, and blows with very moderate force from the W.S.W. and westward until sunset, when it dies away to a calm. During the night there is little or no wind, and the weather is extremely sultry and oppressive, with very heavy unwholesome dews. After daylight a light air springs up from the northward or N.N.E., which gradually increases to a moderate force, and continues until about eleven a.m., when it falls calm, and soon after is succeeded by the light westerly breeze. The Harmattan, however, sometimes blows steadily and without intermission from the N.E. quarter for several days together, especially about the new and full moon. It is at this season that the *smokes* prevail, and are exceedingly injurious to the European constitution. These smokes are so dense that it is impossible to see a cable's length from the ship for days together; and any vessels that may be in the offing, inward bound, have no resource but to anchor, and wait with patience for clearer weather. In March, April, and May, the weather is clear, with light land winds at daybreak, which gradually die away, and are succeeded by the W.S.W. breeze about ten a.m.; and this breeze blows with moderate force during the remainder of the day and greater part of the night. In these months the atmosphere is serene and clear, particularly during the nights, which are very fine indeed. The palm oil season commences in the early part of March; the oil becomes plentiful in April, and continues to be so until September, when it declines; and from October to March it is, properly speaking, out of season, although small quantities of it may be procured in these months.

In the foregoing remarks as to the seasons and climate, I beg to be understood as speaking of the New Calabar and Bonny Rivers only, and now proceed to consider the best means of preserving the health of the crews of vessels trading there. Masters of vessels should be on their guard against shipping plethoric or lusty men to go to the Oil Rivers of Africa. Drunkards are still worse subjects than these; for if a man undermines his constitution by intemperance in England, he cannot repair it in Africa. I have too frequently remarked that human skill is of little avail in saving the life of a drunkard, when once attacked with the African fever. The fact is, a drunkard is predisposed to sickness, and soon falls a victim to the climate. The plethoric or lusty man, if he has not tampered with his constitution, has rather a better chance; but should he fortunately recover from the fever, he is often annoyed with attacks of ague all the passage home, and does not recover his health until he arrives in England. Thin, raw-boned subjects are the best for the coast of Africa; and they should be selected from men who have made several voyages to the West Indies, as they are, in some degree, seasoned to a warm climate; and those that have never made voyages to a tropical climate should be decidedly rejected. To preserve the health of the crew, the vessel should be housed over as soon as possible after her arrival in the river. Plenty of mats should be procured, and a good, substantial, tight house be at once made, to shelter the crew, and preserve the vessel from the weather. Every care should be taken to make the house perfectly water-tight, as well for the comfort and health of the seamen, as for the advantage of working the palm oil in wet weather. An overstrained economy in the purchase of a few mats is highly reprehensible. The seamen will generally hang hammocks under the house; and, if well sheltered from the weather, will enjoy better health than they would by sleeping below in the steam emitted from the oil. In these rivers it is presumed that the Kroumen do all out-duty required in the boats, &c.; for a European should not be allowed to put his foot over the side, either for the purpose of visiting or going ashore, even on ship's duty (unless unavoidable), as it infallibly leads to dissension and drunkenness; from the worst of spirits; and a drunken fit in Africa is the almost sure forerunner of sickness, and probably death.

All vessels should keep a sufficient quantity of English water on board for use in the country, as the Bonny and New Calabar water has an immense quantity of animalculæ, is very unpleasant to the palate, and injurious to the health. Cocoa is an excellent and nutritious article of diet; and the crew should be well supplied with yams, which is the only vegetable, excepting corn and plantains (the latter not plentiful), that can be procured in these rivers.

If the crew unavoidably get wet, they should immediately rub themselves thoroughly dry with coarse cloths, and put on dry clothes. The forecastle should be frequently cleaned out with a solution of chloride of lime, and the seamen's clothes and bedding kept well aired. Attending to these precautions will be found the best means of preserving health.

Here I may observe that fresh stock of all kinds is very scarce and very dear in these rivers, so that vessels bound to Bonny or New Calabar would do well by procuring their fresh stock and corn to windward, either on the Krou Coast, Frisco, Cape Lahou, the various settlements on the Gold Coast, or at a small village on the sea coast, near Cape St. Paul, called Dokko, or Occo. At these places stock of all kinds is abundant, and very cheap when obtained in barter.

CURRENT.—I have almost omitted putting the mariner upon his guard against the effect of the strong easterly current that runs from Terra Formosa to Old Calabar. This current runs with greater or less velocity almost throughout the year, except in or about the Harmattan season, when it occasionally sets to the westward and W.S.W. Vessels that have advanced much to the eastward of Terra Formosa, and cannot see Foché Point before night, should anchor, in order to prevent the effect of the current; but in squally weather or the wet season it may be as well to work to windward, heaving-to occasionally during the night, according to circumstances: 9 or 10 fathoms is quite close enough to stand in-shore in the night; when in 6 fathoms the surf can be very distinctly heard.

When once to leeward on this coast, getting up to windward again is attended with much trouble and difficulty. I may here remark, that too much attention cannot be paid to the lead upon any part of the coast of Africa, as the current frequently sets directly in upon the land; and from careful observation, upon the windward coast, I can confidently assert that the thermometer is no guide whatever on approaching the land. In more than 100 experiments upon the *surface* water, I could never detect any sensible difference in the temperature when sailing toward the land from no bottom into 45 and 40, and thence close in-shore into 14 or 15 fathoms on the Krou Coast. In the dry season there is little difference hereabout in the temperature of the air and water; the former averaging 77° to 81° (in the shade), and the latter 74° or 75° of Fahrenheit.

DIRECTIONS.—*The Homeward Passage*, through the Bight of Biafra, presents no particular feature to the attention of the navigator, if I may except the strong N.E. currents that almost invariably prevail in it. All homeward bound vessels, that do not intend calling at Fernando Po, should use every possible exertion to pass to the westward of the island, as a good board may be then made to the southward on the starboard tack. Except in the Harmattan or tornado seasons, no advantage can be derived by standing close in-shore, as there are no land winds, and a near approach is, at any time, very dangerous, as the whole of the coast, from Camaroens to the Gaboon (except about Corisco), is generally bold-to, and the soundings in nowise to be depended on. On this part of the coast there is no trade, and the inhabitants are miserable naked savages. On getting to the southward of Prince's Island, the very excellent directions of Mr. Finlaison (given hereafter) may be followed with advantage.

Many navigators have remarked, that on standing to the westward between Prince's and St. Thomas's, even when making a trifle of northing, the N.E. current has been found to diminish in strength as the vessel makes westing. Even so far to the southward as 3° South there is seldom any easting in the wind before passing the meridian of Greenwich.

Vessels bound to the northward should not attempt crossing the Equator to the eastward of 20° W. (the meridian of 21½° W. is to be preferred), and should then make a North or N. by W. course, to get into the N.E. trade wind, which having once fairly gained, the homeward navigation is generally well understood. In this route, after leaving the *Guinea current* in the Bight of Biafra, the ship will gradually get into the *Equatorial current* as she gets to the southward, and this current frequently runs with considerable *velocity*. On examining my journals, I find that, by good lunar observations and an excellent chronometer, I have, at various times, made the following differences to the *westward* of dead reckoning, in the run from St. Thomas's to longitude 20° West of Greenwich, between the parallels of 0° 35′ North, and 3° of *South* latitude. In April, 1830, the brig *Anne* was set 237 miles to the westward and 78 miles to the northward of account in 20 days. In October and November, 1831, the barque *Severn* was set 240 miles to the westward, and 94 to the northward of account in 23 days. In October, 1833, the *Freeland* was set 246 miles to the westward, and 51 to the northward of account, in 20 days. In August, 1835, the same vessel was set 228 miles to the westward, and 43 to the northward in 19 days: and in November and December, 1836, the brig *Caledonia* was set 373 miles to the westward and 107, miles to the northward in 18 days. But it may be observed that, in the latter vessel, I never crossed the Equator, but was generally 8 or 10 miles to the northward of it, until I crossed the meridian of 12° W. In the above runs I have occasionally, but rarely, found slight differences to the southward. When to the southward of the Equator, abreast of the Bight of Benin, I have always found a current running at least three-quarters of a mile an hour to the northward.

DIRECTIONS FOR SAILING FROM THE BIGHT OF BIAFRA TO SIERRA LEONE.

BY THE LATE MR. JAMES FINLAISON.

Ships bound from the Bight of Biafra to Sierra Leone, if from Calabar River, when the wind does not permit them to proceed by the N.W. of Fernando Po, may pass between that island and Camaroens River, when they will find a strong current setting to the southward, apparently out of the River del Rey. After they have advanced to the southward of Fernando Po, they must endeavour to make all the southing and westing they can: passing either to the eastward or northward of Prince's Island, as winds will permit. On the East side of this island the current sets strongly to the southward, at the rate of 1½ knots: westward of Prince's Island the current generally sets strongly to the N.E. at the same rate.

Having arrived at the southward of Prince's Island, if the ship will lie no higher than W.N.W., tack immediately, and try to cross the Line; for, by so doing, you will keep out of the strong N.E. current [the *Guinea Current*] that sets towards the Bights of Benin and Biafra. After you have crossed the Line, you will find that you are nearly out of the easterly current. In the parallel of 1° South you will find the current set to the westward, at the rate of 1 mile an hour. In the month of May or June, when the sun has a high declination, the trade wind is fair to the southward, and you will not gain the regular breeze nearer than in 3° South. This breeze commences from S. by W. As you make westing, the wind will be found to haul more to the southward and eastward, and the current increases to the rate of 1½ knots in an hour, until you arrive as far to the westward as 15° West. On proceeding hence to Sierra Leone, come no farther to the eastward than 15° West, until you are as far to the northward as 8° 30′ N.; then you may steer boldly in for the Cape. You will strike soundings in that parallel, in 14° 40′ W.; and as you approach the Cape the soundings will be found very irregular, from 20 fathoms to 12 at a cast. You will then be 7 leagues from the Cape, and in the fair track of the river.

Having given these directions to our prize-masters, they generally made the passage from Fernando Po or Bonny in five weeks; merchant vessels have frequently been three months, by keeping in-shore.*

BY COMMANDER W. B. OLIVER, R.N.

Conceiving that a shorter passage from the Bights, or Prince's Island to Sierra Leone, than that made by proceeding as recommended in the Book of Directions, to the southward of the Line, might be made by keeping to the northward, I determined to ascertain the fact; and though each time accompanied and retarded by a prize, made three unusually short passages, viz.—one from the River Bonny, anchoring at Prince's, and landing prisoners at St. Thomas, in 18 days; the other two in 13 days each from

---

* The reasons for proceeding as above described will be clearly understood by reference to the Remarks on Currents, page 27, in connection with those given above.

Prince's Island to Sierra Leone; and, on returning to England in Her Majesty's schooner, unaccompanied by a prize. Thirty-nine days having been the shortest of three prizes I sent up under the old directions from Benin and the Gaboon. I issued different directions to prize-masters; and, although not acted on, in absence from myself, I feel assured they would have proved, as they did in my company, an improvement on the old one; a copy of which Directions are as follows:—

Your first object will be to get to the southward, unless you can make a West course (*true*) without any northing; nor should you go to the larboard tack unless you can do so, or to avoid the land. Should the wind hang so much to the westward as to prevent making a good course on the larboard tack, pass to the eastward of Prince's or St. Thomas, or both, as you will sooner get out of the strong easterly current, but do not approach the land within 20 fathoms, day or night, and get frequent casts of the lead.

When to the westward of St. Thomas, and on or near the Line, steer W. ½ N., or W. by N., according as your noon sights give you a northerly set or not, until in the longitude of Cape Palmas, 7° 45′ W.; when steer, in the rainy season (May to September), N.W. by N.; in the other months, N.W., until in 13° West, the longitude of the western limit of the St. Anne Shoals: you may then make a true North course, sounding every 5 miles by night, or thick weather, and every 10 miles by day, from 6° N. to 8° N. If you reach the latter without striking soundings, it will prove that you have passed to the westward of the St. Anne Shoals; when keep away E. by N., by compass, to 8° 15′ N.; then steer E. by S. ½ S. (*East, true*), and you will make the high land of Sierra Leone; if by night, anchor on reaching 12 fathoms.

These instructions can only be acted on in a general way, as of course much depends on winds and currents; but I wish them to have full weight with any officer detached in a prize; and remember, the land about Sierra Leone should always be made to the southward of the Cape.*

II.—PARTICULAR DESCRIPTION OF, AND DIRECTIONS FOR, THE WINDWARD COAST.

This coast has been surveyed by Captain *Vidal*, R.N., in H.M. ships *Etna* and *Raven*, in the year 1838. His survey of this coast, notorious for its unhealthiness, is 900 miles in extent, between Cape St. Anne and Cape Lopez, and is exhibited in eight sheets, published by the Hydrographic Office of the Admiralty.

The RIVER GALLINAS, with which we concluded our description of the coast in the Atlantic Memoir, is the boundary of the territory of SIERRA LEONE. It is famous as having been a great mart of the slave trade; near its mouth is the slave factory of the famous Pedro Blanco. The bar is not difficult to clear for coasters or boats, except during the tide races. It may be done by watching the swell. The coast here is very low and remarkably uniform, and for this reason three large baobab trees near the mouth of the Gallinas are an excellent landmark. At about 6 leagues south-eastward from the mouth of the Gallinas is that of another small river, the *Manna*, off which you may anchor in 9 or 8 fathoms: this mouth is shut up by the beach, on which there is always a great surf. It is sometimes called Roc-Manna, from the unusual circumstance of the shore being covered with blocks of black rocks. At 8 miles farther eastward, passing several villages or factories, you find the little *River Sugury*, beyond which is the bight formed by *Cape Mount*, having from 10 to 14 fathoms of water, with a bottom of black mud.

From the River Gallinas to Cape Mount the coast is very low, and covered with trees. It has a fine sandy beach all the way. At 5 or 6 miles off are regular soundings, from 15 to 18 fathoms, mud and sand, until you arrive at Cape Mount. H.M.S. *Tartar*, Sir George Collier, anchored in 15 fathoms, muddy bottom, Cape Mount bearing S. by E., and a remarkable large clump of trees North. Merchantmen anchor further in, at 9 and 10 fathoms.

CAPE MOUNT, which may be seen at 9 or 10 leagues off, is a promontory of high hills, projecting into the sea, the highest peak being 1,066 feet above the sea; on each side the land is low, rather highest on the North side, with a flat sandy beach to the eastward. The Cape itself is distinguished by cliffs, which may be seen 4 leagues off. It is very remarkable, especially in coming from the westward, when it first makes like an island, and contrasts greatly with the low and uniform coast to the West of it.

---

* *Nautical Magazine*, March, 1842, p. 168.

To fall in with Cape Mount, you ought to keep in the latitude of 6° 40′, having, on account of the current which sets towards the shore, frequent recourse to the lead, when you think yourself near the land. In the night you may not approach nearer than to 26 fathoms, unless well acquainted.

To the westward of the Cape lies the Road, into which you may run, until the point of the Cape bears South and S. by E. There, in the summer season, that is, between October and May, when the weather is generally fair, is anchorage in 9, 8, 7, and 6 fathoms, sandy ground; but it is more common to lie in 15, 14, 13, 12, and 10 fathoms, because the tornadoes and southerly winds sometimes make a very hollow sea. The watering place is near a large tree in front of the outer point of the cape; and here, in the fine season, you may take in water with great facility.

In coming ashore with your boat, you must bring a hawser with you, and fasten one end of it to the land, the other being dropped with the anchor to seaward, so that you may prevent the breakers by it; for you run directly against the flat beach below the town, without any shelter of banks or cliffs; in the morning, you may easily get ashore with smooth water.

To the northward of Cape Mount there is a river of the same name, which has been celebrated for its trade. There is 7 feet water on the bar at low water, and 13 at high water; the current runs very strongly out, and the best time for crossing the narrow bar is at half-flood. Between the Cape and the entrance of the River there is good riding in the Bay, during fine weather, in from 15 to 6 fathoms: but from 14 to 12 fathoms should be preferred in the rainy season, and even there it is hazardous, unless provided with the best ground tackle; for southerly and S.W. winds, in that season, set into the Bight with a tremendous sea and heavy gusts, which raise a violent surf on the shore, that may be heard at a distance.

Those approaching from the westward by night, without a previous sight of land, must take the precaution of sounding in time, in order to avoid the danger arising from the velocity of the current. As there are 15 fathoms close in-shore, you should not advance by dark nearer than in 20 or 25 fathoms. The same precaution should be taken during the *Harmattan*, when the sun is obscured by haze for days together, and the current varies. (See Note on page 15.)

LIBERIA.—The COLONIZATION SOCIETY of the United States of North America, with the view of relieving themselves from the presence of emancipated Negroes, took measures, about the year 1817, for founding a colony of free blacks on the western coast of Africa. After several unsuccessful attempts to obtain a settlement, they commenced upon Sherboro' Island. A worse place could not have been selected; for, soon after landing, the insalubrity of this most unwholesome place began to show its dreadful effects on the settlers. These consisted of twelve white men and a great number of coloured people. Eleven out of the twelve white men fell victims to the climate in a very few months; and the remaining one left in June, 1820, and most of the coloured settlers followed to Sierra Leone.

In 1821, settlers again arrived and established themselves on about 10 acres on the banks of the River Mesurado, where the settlement of *Monrovia* was founded. They extended their footing on both sides of this river, with much opposition from the natives, the war with whom was continued until the latter part of 1823, when an officer and twenty-five men from a vessel of war volunteered to protect them; but it is a lamentable fact, that the whole of these men fell victims to their hardships, and the baleful effects of the climate. In 1824, the settlers turned their attention to commerce, and still extended their operations.

Perfect or uninterrupted tranquillity cannot, however, be expected without compact and adequate means of protection; and it appears that, in 1835, the colonists were attacked by some tribes, who stormed a frontier settlement, *Fort Cresson* at Bassa, and massacred a number of inhabitants. At the same time, *Edina*, another settlement, was likewise threatened.

According to an account of Liberia, given in the *Nautical Magazine* (August and September, 1840), the extent of territory, at present called Liberia (nearly the whole of

From Picaniny Bassa to the *Nine Trees*,* and *Santree* or *Bullam Town*, the distance is 2½ leagues; beyond these, to the eastward, is the River of St. John. The mouth of this river makes the *Grand Bassa*, or *Bissaw Beach*, which trends in a South direction, nearly 2 miles, to *Bassa.*

The *Nine Trees* constitute a singular and excellent mark for this coast. Mr. Norris said that nothing could be more remarkable than their appearance; and what rendered them more so was their leaning rather to the S.W., which is contrary to most of the trees on the coast, as they generally lean toward the N.W. But M. Bouët-Willaumez says that these trees are a good mark only when close in-shore near Grand Bassa, as they are scarcely distinguishable from other trees, and do not appear regular except seen from the bay.

The anchorage off *Picaniny Bassa* is with these trees bearing S.E. by E., and the large house of the chief, before mentioned, N.E. by E. That of *Grand Bassa*, in the rainy season, is with the Nine Trees North, about 6 miles distant (as above), where you will lie in 15½ fathoms, bottom of very rough blue marl. In the dry season the anchorage is nearer shore, in 12 fathoms.

The Nine Trees stand on an eminence above the town of *Bullam*, a league or more to the westward of St. John's River, which river limits the Grain Coast on the West.

THE GRAIN OR PEPPER COAST.

The designation of the "Grain" Coast is derived from its being the source from whence the Grains of Paradise, Guinea Grains, or Malaguetta† Pepper is procured. This wholesome spice is chiefly used in England in veterinary medicines, and to give an artificial strength to spirits, wine, beer, and vinegar; though these latter uses are contrary to law. The seed is the produce of an amomum, of which there are several species, but the exact number of which is not known; one has recently been made known by Dr. Daniell, and called Amomum Danielli. About from 15,000 to 19,000 lbs. annually pay duty in England. It is brought over in casks.

The ST. JOHN'S RIVER, as before stated, is considered as the boundary of the Grain Coast. It was visited by Comm. Lynch, U.S.N., in the beginning of 1853, who says of it:—

Within the bar are concentrated the waters of three rivers, the *Mecklin*, flowing from the North; the *St. John*, from the N.E.; and the *Benson River*, from the East. This great body of accumulated water is forced through a passage narrower than the principal stream; and when the tide is ebb, and the wind blows fresh from the shore, there is drawn across it a line of terrific breakers. At this season, however, the winds are ordinarily light; and with a skilful pilot the bar can be passed in safety.

The *Benson River* pours in its tribute opposite to *Edina*, and on the West side of the junction is the flourishing town of *Buchanan.*‡ On the river adjoining the town there was a steam saw mill in operation; and in the cove beyond it one small vessel was hauled up for repairs, and two others were anchored in the stream. The streets of Buchanan are wide, and parallel with the beach.

The *St. John River* is as wide as would be the united streams of the Mecklin and the Benson. At 3 miles up it is separated into two branches by *Factory Island*. For 30 to 50 miles from the sea it is one uninterrupted camwood forest, and very large quantities are cut for fuel and export. The settlements on the St. John appear to be all flourishing.

CRESSON, an establishment above alluded to, formed through the energetic measures of the philanthropic Mr. Cresson, is about 2 miles S.E. of the mouth of the St. John. It is called Bassa Cove and Fish Town on the charts. It was founded on the peace principles; but the massacre in 1835 demonstrates the folly of this amid such a people. It would appear that it has great capabilities as a harbour.

GRAND BASSA.—The town of GRAND BASSA, with its anchorage, has been already noticed. The same sort of provisions and resources may be found here as at Mesurada. *Bassa Cove*, 2½ miles to South, on which *Fish Town* is seated, has from 6 to 2 fathoms of water. This cove is very small, but very safe. It is bounded on the West by two large rocks above water, between which and the shore a vessel drawing 14 feet may moor, in case of emergency.*

---

* Formerly known as the *Seven Trees.*

† Spelt variously; Malagetta, Meleguèta, Melegeta.

‡ This settlement was founded by the New York and Pennsylvanian Colonizatión Society, in 1835, and consists of the emigrants who escaped the massacre at Port Cresson in that year. In 1838 the population was 200, and in 1853 it was 600, mustering 100 fighting men.

The best marks for Grand Bassa are the large houses built in the European style by the American colonists. The governor's house, over which floats a flag, nearly American, is the best point of recognition at a long distance. Approaching the place, the other houses became apparent; and a large umbrella shaped tree is seen surmounting them all. You may anchor off the government house. There are some black rocks to the N.W. of the bar. The river St. John separates the colony into two parts; Bassa to the right, and *Edina* to the left or West. The river is also divided into three principal branches; one of which is called the *Benson*, and almost insulates Bassa; another runs to N.N.W., and is called the *Mechlin* or *Mackland*.

A large and conspicuous rock, called *Tobocannee Rock*, lies about 2 miles from shore, at the distance of 6¼ miles S.E. ¾ S. from the point of Bassa Cove; and from it extends a reef under water, 2 leagues to the westward, and nearly parallel with the coast. On the shore, within this rock and reef, is *Tobocannee* (or Tobacconee), which may be known by a clump of trees spreading over it. There is a passage for small trading boats, but no larger vessels, between the reef and land.

The ground all the way hence to CAPE PALMAS, an extent of 50 leagues, is generally foul and rocky. Small working chain cables are, therefore, here of essential use, particularly to vessels that must come-to at the different places of trade. Such vessels most conveniently commence to windward, on account of the current, which sets along the coast to the S.E., and thus much time and expense are saved.

After passing the Tobocannee Rock, outside of which is another rock awash, you will plainly see the trees of *Tobocannee*, and can then bear up for the anchorage of New Sesters, the principal mark for which is a group of tolerably high trees. A good landmark for this part is *Tobacco Mount*, 881 feet high. Its summit is composed of two or three hummocks. It is on the parallel of New Sesters, and 9 miles inland.

There are several villages at this point of *New Sesters*, or *Young Sesters*, or *Neetoo*, once active slave marts. Continuing along the reef, you pass *Trade Town*, where some large magazines, built of straw, stand near the houses. Then follows *Great* and *Little Culloh*, or *Currow*, and *Tembo*. The line of the reefs, which is interrupted before these villages, re-appears to the South of *Manna*, the large black rocks of which are surrounded by shoals reaching 2 large miles off-shore. When abreast of Tembo you will be able to make out, to S.E., the magazines and straw huts of the River Cestos. It may also be made out by two large trees, which stand on the left bank of that river, one of which is very high and spreading at the top. When on the parallel of this tree, to the West of it, you may anchor in 6 to 8 fathoms, having the *Manna Rocks* between North and N.N.W., avoiding to choose a berth to the South of the parallel of the tree.

GRAND CESTOS RIVER.—The entrance of the RIVER SESTROS, or *Grand Cestos*, lies in about lat. 5° 26′, lon. 9° 34′, and is, therefore, about 20 leagues from Grand Bassa Point. The mouth of the river is covered with rocks, of which several are above water, and 2 miles from shore. Here you may anchor in 10 fathoms, muddy bottom. The river is navigable for boats as far as the *King's Town*, the watering place in the rainy season, and more than 4 leagues from the entrance.

Grand Cestos River offers the best position for a trading colony. It has been the site of the palm oil factories of the traders on that part of the coast: its bar affords 11 to 12 feet water: the roadstead for vessels gives better shelter than is to be found on a very long line of coast; so much so, that a vessel of 149 tons burthen was once hove down and coppered there; palm oil in considerable quantity is produced in the neighbourhood. From the experience of the persons employed at the factories there, the climate appears, for the coast of Africa, healthy.

At the mouth of the Grand Cestos was formerly the Norman establishment of Grand

---

* Of these rocks the westernmost is called *Yellow Hill*, the other *Andrew Hardman*. In the year 1761, when the *Améthyste*, a French frigate, made great havoc upon the coast, the commander of the brig *Snapper*, of Liverpool, ran his vessel within them, stript and moored there, and continued trading in safety, while the small craft of the enemy, then at anchor in the offing, dared not to attack him.

Dieppe; the trees and village are on the left or East bank of the river, the village being hidden by the wood. In some positions, the entrance may be distinguished by three hillocks, two of which are much larger than the third. The starboard point, on entering, terminates in a chain of reefs, which extend a long distance to the S.E., but you must close with them to enter the deepest part of the channel. On the opposite side are some sandbanks, which frequently break. The outermost rock on the starboard side is one of 12 feet, called *Spence's Rock*, but to the S.E. of this is one of less than 11 feet. These are the more dangerous, inasmuch as that they do not always break.

SANGWIN.—The town of SANGWIN is 5½ leagues to the S.E. from the Grand Cestos. It may be known by a large rock, called *Bai Yah*, or the *Devil's Rock*, with a bushy clump on the top, and lying at 2 miles from shore, to the southward of which there is anchorage. Between the River Cestos and Sangwin, at 2½ leagues from the former, is *Rock Cestos*, known by some rocks which lie off it, and a large solitary palm tree on the point. Between the rocks and beach you may anchor. Provisions and firewood may be got at Sangwin. *Baffou Bay*, which follows, is well sheltered from the South and S.E. The natives here have a bad reputation. *Baffou* may be known by having no large trees about it; some large rocks lie off the point, to the northward of which there is anchorage, in sandy ground.

Settra Krou, a very large town on the beach, is 12 leagues S.E. ½ E. from Sangwin. The greatest part of the ground between is foul, but a few spots are fit for anchorage.* *Tassou*, or *Tahou*, is known by three rocks lying off it, between which and the shore you may anchor at 1 mile off. One of these rocks is pierced through in a singular manner. *Bottoa*, or *Bootou*,† appears, at a distance, like an island, and is known by its high land (266 feet) and bushy trees.

SINOU RIVER is, or was, known by a large single tree standing upon the pitch of the cape, to the eastward of which are some breakers. Off this you may anchor in 16 fathoms, sand and stones, at 5 miles from the shore. Sinou makes like a long bay, extending North and South. Commander Lynch says of it (in 1853):—The anchorage is an exposed one for large vessels, but smaller ones find a partial shelter from the S.W. wind and its accompanying heavy sea behind Bloobarre (Bloo Bara) Point. The Sinou, a small but placid river, was selected, about eighteen years ago, by colonists from Mississippi and Louisiana, with a few from South Carolina, who founded the town of *Greenville*, on the right bank, just above the river's mouth.

From the sea *Greenville* presents an attractive appearance. Directly abreast of it the shore curves inwards, and then stretches to the North a long line of yellow beach, fringed with a deep forest. To the South are two bays; at the N.W. extremity of the northernmost is the promontory of Bloobarre, a broad, high rock, its surface bare and smooth to the summit, which is covered with luxuriant foliage. Outside this is a ledge of detached rocks, covered with gulls at low water, and between is the bar. Above Greenville, which is regularly laid out, and by far the neatest settlement seen by Commander Lynch, are the settlements of *Rossville* and *Readville*, subject to inundations. Rice is the principal food crop; palm oil being the chief export. Hereabout the easterly current sets, very commonly, 2 miles and more in the hour.

SETTRA KROU, &c.—Proceeding along the coast, a long, flat, black rock will be seen ahead; it is called the *Krou Rock*, and is the largest and outermost of the rocks around it; it may be passed close-to. To the N.E. of it is the village of *Little Krou*, and to the E. by S. the village of *Settra Krou*. Large, stout-built houses, used as European factories, stand in the middle of the latter village, and serve to distinguish it. The villages of *Kroubah*, and *Great* and *Little Nanna Krou*; succeed. All these villages are occupied by that exceedingly useful race, the Kroumen, or natives of the Krou coast. Off here the bank of soundings is considerably wider than it is either West or East of it; the 100 fathoms line being here fully 31 miles off-shore, instead of 15 or 20 miles as elsewhere.

---

* Lieut. Bold says—"It is on this part of the coast that you may hire men to assist the ship's crew in the more laborious occupations of trade; they are strong, willing, hard working people, and strongly recommended to the oil vessels bound to leeward, as being extremely serviceable in cases of emergency, or sickness of their own men: they are faithful to you in a strange country, and content with a small *dash*, or present, on quitting at Prince's or St. Thomas's Islands, whence they commonly find conveyance back to the coast."—These are the *Kroumen* already noticed by Capt. Midgley, page 320, and for a further account of them, see the Journal of the Royal Geographical Society, Vol. XII., 1842, pp. 205, 6.

† M. de Bouët-Willaumez calls this Grand Butteau and Little Butteau (great or little *butte* or mountain), deriving the name from the old Norman appéllation. The term, if correct, must be derived from the hill mentioned. It was here that, in 1842, the French commander obtained the land between the river (Fishermen's River, or Grand Bootou or Butteau), and the Tahou for the French nation, in case it should have been thought advisable to found a depôt here.

Krou Settra is readily known, in clear weather, by the high and bare trees, which rise like masts of ships laid up. Off this place you may anchor in 16 or 15 fathoms, good sandy ground; but those bound to it must carefully avoid a dangerous reef, extending 3½ miles from shore, and over which the sea breaks once in every 15 or 20 minutes. There are 6 fathoms close to it; 14 or 15 fathoms will carry you without it; but, by advancing to 12, you may be aground. Krou Settra and the shoal, in a line, bear E.N.E. At 6 miles from this shoal is the *Swallow Rock*, off Wappou, which is likewise covered. This shoal bears nearly S.W. 2½ miles from the town, and S.S.W. 3 miles from a large rock or islet, westward of Wappou, called *Totwarah* or *Flat Isle*. *Wappee*, or *Wappou*, is known by a single tree on the beach. There were two villages, Great and Little Wappee, the former has been destroyed.

Neefoo or *Niffou* is 4 miles south-eastward from Wappou; it consists of *Little*, *Middle*, and *Great Neefoo*; *Drou*, or *Droo*, to the West of the *Rio dos Escravos*, or Slave's River, is 5 miles beyond Niffou. Drou has been a place of good trade for ivory and malagette pepper; but unless a boat is well manned and armed, it is dangerous to trade here: A rock lies off the mouth of the river, which may be entered by passing to the northward. *Baddou*, or the *Four Towns*, lies on the beach; the same caution is to be observed here as with the people of Drou; the coast about it is entirely foul.

LITTLE and GRAND SESTERS (or SESTROS) were formerly the Petit and Grand Paris of the Dieppe traders. The first is 8 or 9 miles from Baddou. The river on which it stands flows through a fertile plain, richly planted with palm trees. The second is divided from it by *Sesters Point*, which separates the plains. It is planted with some umbrella topped trees, one of which is remarkable, and will point out the village. A mile off the point is a large black rock, called *The Carpenter*. Grand Sesters is on the East bank of the river of the same name. You may anchor off the Carpenter, in 12 fathoms.

The town of *Garraway* is about 17 miles to the south-eastward of Grand Sesters. At 12 miles there is a remarkable ridge of trees, a good landmark. Garraway may be known by three hills on the West, with a clump of trees on its extreme southern point. You may anchor off it, to the southward, about 4 miles from shore, in 20 or 24 fathoms, good ground; but the coast off it is bordered by a reef. Garraway, and its road and river, were surveyed by MM. Bouet-Willaumez and De Langle; but although the little river is easy of entrance for boats, there are so few resources to be obtained that it will be useless any further to describe the place. It is high water, on full and change, at $5^h 45'$; rise, 2½ feet. There are several villages at Garraway, and it may be recognised by a very distinct clump of trees called Blackwill Trees, standing on a high hummock.

At 3 leagues S.E. from Garraway is the little negro town called *Rock Town*, within a point covered with trees, and which received its name from a dangerous reef of rocks, extending from it to the distance of 3 or 4 miles. Some of the rocks are above water. Between this place and the cape to the eastward is *Cape Palmas Little Town*. The large town is near the pitch of the Cape. It has been recommended to those passing not to stand nearer to the coast hereabout than in 24 fathoms, the soundings within that depth being very irregular and the bottom foul.*

In leaving the coast of Garraway, to double Cape Palmas, there are two routes to follow. The first is to pass between Fish Town and the North end of the reefs extending E.N.E. of the Coley Rock. The depth in the narrowest part of this channel is 7 to 10 fathoms, rocky bottom, the width 1½ miles. The current runs to E.S.E. at the rate of 2 knots, and often more, keeping the same velocity past Rock Town Point and Cape Palmas. This is by much the shortest route, and may be easily done while daylight lasts. But if it is intended to go South of the Coley Rock, on quitting Garraway make away for the West, in order to bear up against the prevalent East current as the West and S.W.

---

* The whole of the Grain Coast, between Cape Mesurado and Cape Palmas, is represented in the excellent chart of Captain Vidal, Sheet X., published at the Hydrographic Office.

winds, and attain the depth of 90 fathoms before you bear off for the eastward, and must wait for daylight to pass Cape Palmas. In case of any doubt whatever, anchor without hesitation. *Fish Town* and *Rock Town* are built on two points, which form three slender bays, and terminate in black rocky heads. The heights are crowned with palm trees, and these and the woods give a very picturesque and varied aspect to the land.

CAPE PALMAS, &c.—*Cape Palmas* is the southernmost land of all the coast of Guinea, and its extremity lies in lat. 4° 22′ N., lon. 7° 44′ 16″ W. Captain John Lok, in 1554, the first Englishman who sailed along it, described it as "*Cape de las Palmas*, a fair high land; but having on the eastern side some low places by the shore, which look like red cliffs, with white streaks, resembling highways, each the length of a cable." It has been latterly described as a land moderately high, thickly wooded, with small hillocks and cliffs toward the sea, with red clay fissures resembling tracks or roads, and a large mud-walled town on the eastern elevation. The natives are described as poor and inoffensive, and live principally by fishing; though they sometimes bring off to vessels a small quantity of ivory and malagette pepper.

At about 3 miles to the southward of the cape, and extending in nearly a *true* East and West direction, is the *Cape Shoal.* Between it and the shore are 13 fathoms of water; and within it, near the latter, small vessels may anchor; but it is to be noticed that the current here sets with great velocity to the S.E. At about 2 leagues to the West of the Cape Shoal is the rock called *Coley's Rock*, which lies, with the pitch of Cape Palmas, E. 22° S., 3½ leagues, and the trees to the West of Garraway, N. 5° W., 13 miles.* The least depth over it is from 6 to 10 feet, and it breaks in high winds: it tapers down to 7 fathoms all round, as close as you can chuck a biscuit, and near it are 13 fathoms. The *Cape Shoal* is very dangerous; but having deep water all round, a fleet may pass between it and the land; but it must be remembered that the current sets strongly to the S.E.

There is an American or Liberian establishment, like that at Mesurado, Grand Bassa, &c., on the point of the Cape. It is called *Harper*, and provisions, wood, water, &c., may be got. You may pass close to the point, and anchor in front of the houses.

TRADE between GRAND BASSA and CAPE PALMAS.—The mode of traffic between these places is that called the round trade: the *round* being a nominal valuation, signifying one of every article employed in barter, for a tooth, &c. It is described by Lieut. Bold (p. 46). The chief products are ivory, malagette pepper, and rice. The latter is excellent in quality; but not, in general, being properly cleaned, is in the less demand.

III.—THE IVORY OR TEETH COAST, FROM CAPE PALMAS TO CAPE LAHOU.

The chief places of trade are Cavally River, Bassa, Wappou, Bereby, Tahou, St. Andrew's Bay, Lagos River, Kotrou, and the town of Lahou. The mode of barter is the *round trade*, already noticed. The places in the neighbourhood of Cape Palmas abound in malagette pepper, rice, and grain. At the other places the chief commodities are ivory and palm oil; and of these, the best stock has been commonly found at St. Andrew's and Lagos River.

---

* This rock was discovered by Captain Coley, of the ship *Queen*, of London, in 1795, who stated it to lie with two high trees above Garraway, bearing North, 5 leagues, and the pitch of Cape Palmas E.N.E. 6 leagues. But it has been shown by Captain Adams that it certainly must lie nearer to the land: and this has since been confirmed. Captain Thomas Hamlin, in the brig *George IV.*, from traversing past Cape Palmas, in the evening and night of the 13th of January, 1825, was of opinion that it is connected by a ridge or a bank with the Cape Shoal.

ATHOLE ROCK.—There appears to be, to the eastward of Cape Palmas, another sunken rock, upon which H.M.S. *Athole* struck, on the 16th of December, 1830. The ship was running along-shore, in 12 fathoms, at 3 or 4 miles from the land, and at 1½ miles from the outer breakers. On each side was a depth of 10 fathoms. From the rock the bearings were, the great town of Cape Palmas N.W. westerly, a round rock above water E. by N., and a *clump of trees* on the eastern extremity of the land E. ½ S. (*Variation*, 19° W.)

In the offing, the winds, in the fine season, are generally from between the West and S.W: In the rainy season they are generally from S.S.W. The current to the eastward, 2 miles and 2½ miles in the hour.

CAVALLY.—At 6½ miles' distance from Cape Palmas is a little town called *Gurranwah*, *Gruway*, or *Grewa*. In front of it is a reef, which plainly shows when the breeze has set in. After passing this point and village, you will see the first of the villages, called *Cavally*, distinguished by the name of *Little* or *Half Cavally*, and then other groups of villages of the same name: then the River Cavally, which will be made out when it bears North.

The CAVALLY RIVER may be entered to procure Kroumen, or, still better, anchor off it. Provisions may be obtained at the villages, but communication is difficult. One Cavally village is situate on the eastern bank, and near the entrance of the river, on the opposite side of which is a reef extending seaward more than 1½ miles. There is good anchorage off the river in 20 fathoms. The river is navigable for boats. This place may be known by the two points at the river's mouth, which is wide and barred; though, in coming from the westward, you will not perceive the river till you are nearly to the S.E. of it.

From Cavally the coast trends nearly *true* East to *Growa*, known by four or five rocks before it, some of which are breakers. The land all along is even, but appears to double when you are near Growa; then, having passed two hummocks close to each other on the beach, you may see a low, flat point, projecting into the sea, which breaks very much upon it: this is *Tabou Point*, about 2 leagues E.S.E. from Growa. You may ride before the town of Growa in 21 and 22 fathoms, good ground, and off Tabou Point in 15 fathoms, at 2 miles off.

Between *Tabou Point* and the town of *Tahou* the land is considerably higher than that to the westward, and is varied with many hummocks, particularly within 6 leagues of Tahou, where it is higher, near the coast, than any other seen between this and Cape Mount.

At the distance of 7 miles East from Tabou Point are the town and Point of *Bassa*, off which several reefs extend to the eastward, nearly a mile off-shore. The coast then takes an E. by S. direction for 5 leagues to *Half Bereby* or *Biriby*, between which and the *River Bereby*, or *Nahno*, 3 leagues E.N.E., the coast is lined with reefs, extending upwards of a mile from shore: at 5 miles from Half Bereby, on the outer edge of this reef, is *Devil's Rock*, of a whitish colour.

BEREBY, or *Kadahkoo*, is 3 leagues westward of Tahou: it is situate on the margin of a bay, on which boats can generally land, as there is a projecting point which breaks off the sea; there is also a rock in the Bay called the *Katum Kock*, or, as it has sometimes been called, the Devil's Rock.

TAHOU is a considerable town, 3½ leagues West of the *Rio S. Pedro*. Its shore is rocky, but you may find good riding before it in from 14 to 12 fathoms, only taking care not to approach too near the rocks. Off it is the *Broone Rock*, which is black, and visible at a distance. At half a mile W.S.W. of it is another reef, which breaks 2 miles off shore.

The RIVER SAN PEDRO falls into the small *Bay of San Pedro* at its East side, the West limits being a point which shelters the bay during the dry season. The river was examined by Lieutenant Fleuriot-de-Langle in March, 1844, who named the projecting West point, *Point du Minou*. A little to the West of it are four rocks, three of which were called the *Three Caravelles*, the fourth, the *Malouine*. These break, as will be seen, in coming from the West, and the entrance of the river is masked by Point Minou: it must be brought to bear N.W. to open it. It is high water at 6h 4′; rise, 6 feet 6 inches. The village is on the beach between the Caravelles and Point Minou; the entrance has a depth of 10 feet at half tide. The current outward is very rapid, but it was said that it might be ascended for several days. Wood and water may be got here.

Beyond San Pedro the coast rises abruptly from the sea to hills of a height of 350 to 517 feet. *Highland River* appears as if it might be frequented.

ST. ANDREW'S BAY.—This Bay, as we have noticed, lies 16 leagues East from Tahou. It is easily known by the *High Land of Drewin*, to the westward of it, the coast of which is very rocky in-shore, and some black rocks extend nearly 2 miles off. Between St. Andrew's and St. Pedro Rivers are the towns of *Half*, or *Little Drewin*, *Drewin*, and *Grand Drewin*: the first forming a small bay, 15 miles from St. Pedro, and

Grand Drewin, 6 miles West of St. Andrew's Bay. St. Andrew's River, a considerable one, falls into the Bay. A bluff point, on the West side of its entrance, is called *Swarton Corner;* and behind this, in the proper season, you may be supplied with wood and water. There is muddy ground at the river's mouth, and a black rod in the middle of it. Two large round topped trees show themselves above the land, at about a league to the West of Swarton Corner. The land of Drewin, which is an even table land, seems pretty high when near the shore, but it is not nearly so high as it is said to be in the old descriptions.

In the Bay of St. Andrew's is an excellent road, with 12 to 8 fathoms, fine sandy bottom, with the two trees before mentioned N.W. by W. From this spot are seen three high hills, the St. Andrew Hills, 938 feet high, about 5 leagues inland, appearing in one when the river is open; and as to the eastward of the river there is a line of red cliffs, extending more than 4 leagues, this place may be readily known. By giving the chief his *dash*, or present, water may be obtained here, and boats may proceed 6 or 7 miles up the river, if well armed; for the people are very cunning, bold, and treacherous.* The common watering place is at about 2½ miles up, on the eastern side. The bar of the river is very bad, and is the common entrance of the St. Andrew's and of the Tabetah Rivers. King George Town stands on Swarton Corner, the West side of the entrance.

To the eastward of the cliffs beyond St. Andrew's Bay, the coast is generally very low, with a sandy beach; it has a very beautiful appearance, having many negro huts, overshadowed with trees of every shade, red, green, and orange. At 4½ miles East of the bay is *Trepow;* and at 12 miles begins a series of large reddish cliffs, which are a good landmark for this coast, differing from the portions of coast to the West. The village of *Kotrou* is 3 miles to the East of the first of these cliffs.

If you anchor off Kotrou, the enormous canoes of people will immediately put off with poultry, pigs, bananas, cocoanuts, &c. Tobacco is the most usual currency here.

The RIO DE LAGOS, or RIVER FRESCO, is 10 leagues to the eastward of St. Andrew's River. Here water may be obtained, and it is a place for teeth. At the Fresco the red cliffs terminate. The villages here also offer abundance of eatables.

Beyond the Fresco the coast is low and uniform, and a lagoon extends parallel to the coast line as far as Apollonia, leaving a narrow slip of land half a mile broad, on which stand numerous villages. The high land forms an inner range as far as the Lahou villages.

LAHOU.—JACK or PICANINY LAHOU is 12 or 13 miles East of the Fresco. Like all others here, it is surrounded with a straw palisade, and planted with palms. The low and uniform coast extends to *Half Lahou* and *Salt Town*, at 16 and 18 miles East of Picaniny Lahou. The town of GRAND LAHOU, on the West of the river of the same name, is the chief place of trade on the QUAQUA COAST, and one of the largest and most populous in these parts. It has a pleasant aspect from the sea. Gold dust and teeth may generally be obtained here, mostly for fine India goods, though the commodities for traffic are variable, the natives being very fickle in their taste. Ships may ride before the town, as near the East shore as agreeable, in 8, 9, 10, 11, 12, and 14 fathoms, clay ground; but westward of the cape it is all mud, or sandy ground, with nearly the same depths of water.

From the River Fresco above mentioned, in lon. 5° 33½′ W., lat. 5° 5′ N., the coast continues in one unvaried straight line, in a most remarkable manner, to Picaniny Bassam, in lon. 3° 57′ W., lat. 5° 15′ N., a distance of 97 miles, the direction being E. by S. ¾ S. (*E. ½ N. true.*) From thence it trends in a line equally straight nearly to Axim, in lon. 2° 15′ W., a distance of 53 miles, in the direction of S.E. by E. ¼ E. (*E. by S. true.*) Off Picaniny Bassam, where the coast changes its direction, is a tract of sea of unfathomable depth. This gully is called the *Bottomless Pit.* Its general direction is North and South, and its breadth from 1 to 2 miles. On each side of it are from 40 to 70 fathoms; while at a quarter of mile off-shore there is no bottom with 100 fathoms, and at 2½ miles is a depth of 256 fathoms; beyond this it exceeds 200 fathoms, although on its edges, at 9 miles off-shore, there is only 50 fathoms.

The coast, which is generally low, comprises the towns of *Jack Lahou*, *Jacque*, or *Jack-Jaque*, *Ivory* and *Half Ivory Towns*, *Picaniny Bassam*, *Gammou*, and *Grand Bassam.* The trade has been chiefly in gold and ivory, especially at the Bassams and Assince, the gold being reputed of a superior quality. Small cattle are also purchaseable, with fowls, yams, and palm oil. The produce of the last article is very great, and the season for it commences in September, after the *Gatoon Custom*, or harvest home.

---

* *This river was* acquired by France, by virtue of ancient treaties passed in January, 1787.

The town of JACK LAHOU is nearly 9 leagues from Lahou. The land appears double for the first 2 leagues of this extent. At about 11 leagues from Jack Lahou is *Picaniny Bassam*, on a steep shore, to the northward of the *Bottomless Pit*. Should you enter into 50 fathoms, you must anchor betimes, to avoid the danger of being driven on shore. The safest way for those trading here is to come-to, a few miles to the eastward, where from 35 to 30 fathoms, with sandy bottom, may be found.

GRAND BASSAM.—From Picaniny Bassam to the mouth of the *River Sueiro de Costa* and Grand Bassam the distance is 5 leagues. On advancing from the westward, the river may be easily known by the cliff or rock on the beach of its western point. The factory also will be seen on its western bank. There is good anchorage off the river in from 12 to 9 fathoms, mud and clay bottom, at 2 miles off. Plenty of water and refreshments may be obtained here. The town is 3 miles above the entrance, and opposite to it the large river of *Aka* and *Akba* debouches. A very extensive lake penetrates the country to the North and West of Grand Bassam, one arm extending 20 miles to the North, and another to the West of Picaniny Bassam. These lakes were explored by the French ship *Serpent* in 1848.

Grand Bassam (or *Fort Nemours*) was acquired by M. le Comte Boüet-Willaumez about 1843. The factory, or Fort Nemours, is constructed on the extremity of the West shore of the river, consisting of a square palisade, with bastions, and four barracks for the garrison. There is good anchorage off the factory, in 11 to 14 fathoms. You can easily land, especially in the Senegal canoes, at the foot of the fort. The bar of the river, which is a very short distance East of the establishment, has a depth of 13 feet at low water, and ships of moderate draught can readily clear it; once inside, there is 5 to 7 fathoms water. The West winds assist the entrance, and the land breeze the leaving, of the river. The chief commerce of Grand Bassam is in gold, either in ingots or dust, which are accounted the purest on the coast.

RIVER ASSINEE.—Between Grand Bassam and the mouth of the Assinee River the distance is 9 leagues. The town of Assinee formerly stood on the eastern side of the entrance; but it was destroyed, in 1814, by the neighbouring hordes, from jealousy of the extensive trade previously carried on. The land about this place is low, but covered with high woods; and the river is now rather difficult to make out, being shut in by the trees; but it makes like a vista between the woods, which may be seen at a considerable distance. The current along shore hereabout sets rapidly to the eastward. You may anchor off the river in from 13 to 10 fathoms, sand and clay, at 1½ miles from shore.

ASSINEE (or FORT JOINVILLE) is another French possession, regained in 1843. It was an old French establishment, dating from the time of Louis XIV., but long abandoned. The fort, garrison, and establishment are quite similar to that of Grand Bassam; and, like at that place, gold is the chief object of trade. The river, after reaching the coast, turns at a right angle to the West, and after a course of 6 or 7 miles it debouches from behind a narrow, sandy tongue of land, which thus extends from its S.E. shore. The depth on the bar is about 10 feet at low water; and is, therefore, accessible to ships of moderate draught, but the entrance is difficult to make out and to clear. In coming from the West, the establishment will be seen, and may be known by three palm trees on the tongue of land separating the mouth of the river from the sea. Drifted by the current, as soon as these are made out you must be ready to anchor in front of the factory. If you have cleared the bar, and worked up inside the river, you must also anchor before the factory.

At 7 miles from the entrance of the river, which runs eastward parallel with the coast, is the French commercial factory above mentioned, on the North, on a tongue of land which is a portion of the S.W. shore of the very extensive *Lake Ahy*, which, with the *River Bia*, or *Krinjabo*, is navigable in the dry season for 35 miles in direct distance from the coast; and during the rainy season this river would probably afford means of penetrating a considerable distance in the interior.

From the S.E. part of Lake Ahy the lagoon of Tendo runs parallel with the shore for 20 miles, at about a league inland. The depths on it are from 2 to 14 fathoms. *Lake Eghi* joins this lagoon at the back of the village of *Albany*, and is nearly 20 miles long, N.E. and S.W. On its S.E. side the *River Tanoé*, or *Tendo*, enters it by five mouths, not one of which is navigable; but the small *Lake Uani* has access to it, by which the

French steamer *Guet N'dar* entered, and ascended it for 30 leagues, and thus penetrated Africa from the Gulf of Guinea farther than any expedition, except those on the Niger. Several new people, those of Anka and Afuma included, were thus visited, and their riches and commerce opened to European enterprize. The banks of the lakes and streams abound with enormous vegetation, and they may be navigated, as before stated, in all seasons. M. Duburquois' expedition to the River Tendo was in November, 1849; that of M. Boyer to Lake Ahy, &c., in 1843.

IV.—THE GOLD COAST, EASTWARD TO THE RIVER VOLTA.

The WINDS and SEASONS on this coast, generally, have been described on pages 13, 14, 15, 16. The interior is divided into different states, of which the kingdom of *Ashantee*, to the northward of *Ahanta* and *Fantee*, is the chief; and it is now the dreadful and predominating power of all the country. The extent of coast, from West to East, is about 95 leagues; and the countries which present themselves, in succession, are *Amanahea*, *Fantee*, *Inkran*, and *Adampee*; the last being divided from Aquamboo, on the East, by the River Volta.*

The kingdom of Amanahëa is bounded West by the River Assinee and the Cobre, or Ancobre, near Axim. East of this is the territory of the Axim and the Ahanta country, the latter extensive district lying between Axim and Secondee. Boossooah, the capital of Ahanta, is near Boutrie. The *Wassaw* country runs along the whole of the northern boundary of Ahanta, and comes down to the sea coast at Secondee; its extreme East point is near Commendah (or Ekky Tekky, or Akataykie).

Between Cape Coast and Anamaboo, Fantee properly begins; behind the line of coast on this part are the extensive countries of Abrah and Assin. *Coomassie* (or Kumasi), the capital of the Ashantee country, is situated inland about 180 miles due North of Cape Coast. The kings of Ashantee have, at one time or another, exercised dominion over, and collected tribute from, all the countries on the coast, and inland as far as Kong.†

Gold dust, once the staple article of commerce exported from this part of the African coast, is more plentiful in the Fanté town of Annamabo and Cape Coast than in those of Akkrah. It is brought to the former places by the Akim and Ashantee traders, and is considered by some authorities to be much inferior in quality to that obtained from Apollonia and Dixcove. It formerly was much more abundantly brought to Akkrah; but the superior market for European merchandize of Cape Coast has reduced the trade, to which reduction the fact that little or no gold is found eastward of Akkrah has contributed. The gold offered for sale or barter is usually adulterated, sometimes with great ingenuity, but this is easily detected by the customary supervision of a native personage, called a gold taker. Dr. W. F. Daniell, F.R.G.S.‡

There are numerous forts or European factories established along the coast, of which many are abandoned, and most are now of small importance. They owed their existence to the necessity of protecting the slave trade, a humiliating fact. Their office is now to introduce the civilizing influences of legitimate commerce.

---

* The gold dust which is brought down from the interior is obtained from the alluvial sands and soil, and is washed down from the mountains, composed of granite, gneiss, and quartz. At Cape Coast even the sweepings of the streets are impregnated with gold. These are gathered up, and subjected to repeated washings; and the average sum that a whole day's labour at this employment will bring a woman will not exceed 2d. or 3d. a day.

† The name of Ashântee and Fantee, the principal nations on this part of Africa, is derived by some from a tradition that they were both the same people originally, and being at war with Akim, they endured the greatest distress from hunger; the Ashantees found subsistence from a plant called Shan, and hence were called Shan didi, or eaters of Shan; the others were supported by a tree called Fan, and hence were named Fan didi. The verb, didi, to eat, is best expressed by the letters dti, which makes Shandti and Fandti, a close approximation to the national names. The European prefix A to Ashantee is never heard in the native pronunciation.—" Eighteen years on the Gold Coast," by Brodie Cruickshank.

‡ The following tables of the Fanté and Ashanté currency, compiled by the late Mr. Maclean, are founded upon the division of the ounce into 16 ackies; the ounce being worth £4, and the *ackie 5s. Its accuracy is guaranteed* by the well known experience of the author.

Of the forts, &c., the first, which is on the eastern side of Cape Apollonia, is Fort Apollonia,* *British*, now abandoned. At Axim is Fort St. Antony, *Dutch*.

On the Gold Coast, *beyond Cape Three Points*, are:—Acquidah, a fort, *Dutch*. Dixcove, or Nfooma, fort and settlement, *British*. Boutry, or Bautre, Fort Bartenstein, *Dutch*. Tacorady, or Tacorary, fort (ruins), *Dutch*. Secondee, Fort Orange, *Dutch*. Chama, or Assema, Fort St. Sebastian, *Dutch*, at the mouth of the Boosempra. Akatayki, or Commenda, fort, *British*.* Elmina, or Addina, or St. George, fort, *Dutch*. Cape Coast Castle (Igwa of the natives), *British*. Mauree, or Moree, Fort Nassau (abandoned), *Dutch*. Annamaboe, *British*. Cormantine (abandoned), *Dutch*. Tantumquerry Fort, *British*.* At Accra, James Fort, *British;* Fort Crevecœur, *Dutch;* Fort Christianborg, *British*, formerly Danish. Temma, of little consideration, formerly Danish. Pram Pram, a little settlement, *British*.* Ningo Fort, formerly Danish. Adda, on the River Volta, castle, formerly Danish.

On the coast beyond the Volta are, Quitta Fort, formerly Danish, 5 leagues to the northeastward from Cape St. Paul; and in Whydah, forts at Griwhee, originally British, French, and Portuguese, but now in the possession of native chiefs, as shown hereafter.

A Report was presented to Parliament, in 1842, upon the West Coast of Africa. The inquiries were principally directed to the state of trade, and the suppression of the slave trade. From it we extract the following:—

Table I.—Fanté Currency.

Names of Weights.	Weight in		Value.			Names of Weights.	Weight in		Value.		
	ozs.	ackies.	£	s.	d.		ozs.	ackies.	£	s.	d.
Pessua	—	1/48	0	0	1¼	Essien	—	6	1	10	0
Simpoah	—	1/24	0	0	2½	Acandjua	—	7	1	15	0
Takufan	—	1/12	0	0	5	Djua	½	8	2	0	0
Kokua	—	1/8	0	0	7½	Sul	—	9	2	5	0
Taku	—	1/6	0	0	10	Sua-ne-sul	—	13½	3	7	6
Suafan	—	5/6	0	4	2	Djuamien	1	—	4	0	0
Meaton (or Giri-fan)	—	1	0	5	0	Essuanu	1	2	4	10	0
Sua	—	1⅔	0	8	4	Djuamiensan	1	8	6	0	0
Agiratjwi (or Gira)	—	2	0	10	0	Essuasan	1	11	6	15	0
Ensan	—	3	0	15	0	Bendah	2	—	8	0	0
Djuasul	—	4	1	0	0	Perigwan	2	4	9	0	0
Perisul	—	5	1	5	0	Entenu	4	8	18	0	0

Table II.—Ashanté Currency.

Names of Weights.	Weight in		Value.			Names of Weights.	Weight in		Value.		
	ozs.	ackies.	£	s.	d.		ozs.	ackies.	£	s.	d.
Pessua	—	1/64	0	0	0 15/16	Iusuansan	—	2⅓	0	11	8
Damba	—	1/32	0	0	1⅞	Bodomu	—	2½	0	12	6
Takufan	—	1/16	0	0	3¾	Ensan	—	3	0	15	0
Taku	—	⅛	0	0	7½	Djuasul	—	3½	0	17	6
Taku-mienu	—	¼	0	1	3	Sul	—	4½	1	2	6
Takumiensan	—	⅜	0	1	10½	Perisul	—	5	1	5	0
Suafan	—	¾	0	3	9	Essien	—	6	1	10	0
Dumafan	—	11/12	0	4	7	Djua	—	7	1	15	0
Brofan	—	1	0	5	0	Anenfii	—	7⅚	1	19	2
Agiratjwifan	—	1 1/12	0	5	5	Esua	—	9	2	5	0
Insuansafan	—	1⅙	0	5	10	Suane-sul	—	13½	3	7	6
Bodorabufan	—	1⅓	0	6	8	Essua-nu	1	2	4	10	0
Sua	—	1½	0	7	6	Essua-san	1	11	6	15	0
Duma	—	1⅚	0	9	2	Essua-san-sul	2	—	8	0	0
Brofu	—	2	0	10	0	Perigwan	2	4	9	0	0
Agiratjwi	—	2⅙	0	10	10	Entenu	4	8	18	0	0

N.B.—An ackie is equal to 8 Ashanté takus, and to 9 Fanté takus. This table is extracted from "Ethnography of Akkrah," &c., by W. F. Daniell, Esq., M.D., F.R.G.S., in Edin. New Philos. Journal, Vol. liii., 1852, pp. 129, 130.

---

* British forts, &c., abandoned, are distinguished thus (*).

The territory surrounding Cape Coast Castle was originally obtained from a tribe called the Fetus, who have long since ceased to have any power or influence. It is now generally said to be situated in Fantee; though, strictly speaking, it is not situated in Fantee Proper. The Fantee language is spoken. Being the seat of the local government, the territory belonging to it is understood to comprehend the entire colony, from Dixcove to Accra. The territory formerly attached to it does not exceed 130 square miles. A small river, the Kakoom, or Sweet River, runs through it, and enters the sea 5 miles to the westward. Several rivers, namely, the Amissa, Anaqua, and Sacoom, enter the sea between Cape Coast Castle and Accra. None are navigable, or can be entered by vessels; but the rivers last mentioned are navigable for canoes and small craft for considerable distances into the interior. There are no harbours, with the exception of Dixcove, where small vessels, drawing 6 or 8 feet water, might enter in good weather. The remainder are open roadsteads; and vessels discharge their cargoes at from three-quarters of a mile to a mile from shore. The roadsteads of the several settlements may be said to be always safe, and wrecks very rarely occur; where they have taken place, they have invariably occurred through carelessness, or causes that ought not to have existed.

The Dutch town of Elmina, 7 miles to the westward, is the nearest large town to Cape Coast Castle; and none of the native towns near Cape Coast are large, or can be called other than villages. Djuguau, 16 miles to the N.W., is the largest. The communication with all the neighbouring, as well as some distant towns and villages, is constant.

The native population are exceedingly addicted to quarrels, or "palavers," as they are called, and these frequently were the sources of constant petty wars; but, generally, the natives are not of warlike habits. It is now perfectly safe for any person to traverse any part of the country, and residents can go with perfect safety to Coomassie, a distance of about 180 miles from the coast. The *slave trade* may be said to be extinguished on the line of coast from Apollonia to Accra.*

Slavery on the Gold Coast prevails to a great extent among the natives. Those slaves which are chiefly for domestic service, and not for prædial labour, are treated with mildness, and are, consequently, comparatively happy. The Fantees make no wars now to obtain their slaves: those which they hold are either born in bondage, or are what are called "slaves of the house," and are more leniently treated than others; or are purchased in the neighbouring countries, where the slave trade is still carried on; or they are taken in "pawn" either for the debts of others or themselves; and, not being able to pay these debts, they lapse into slavery.

In 1827, owing to the heavy expense incurred by Sir Charles M'Carthy, in his disastrous war with the Ashantees, the English Government withdrew all the public establishments from the coasts, and gave up the forts to the merchants, to be held by them as factories. It was then determined that the forts should be delivered over to the merchants on the following conditions—viz., that the two principal forts of Cape Coast Castle and Accra should remain dependencies of Sierra Leone; that British law should continue in force there; and that the affairs of the forts should be chiefly managed by a committee of merchants of London, appointed by the Government. The forts formerly occupied by the African Committee were the following:—Apollonia, Secondee, Commenda, Cormantine, Tantumquerry, Winebah, and Whydah. †

Mr. John Jackson was chosen president, but it was considered best to have an officer at the head of affairs in no way connected with trade, and Mr. George Maclean, an

---

* Report, &c., as above, Governor Maclean, App., pp. 68—70.

† To those trading on the coast it may be useful to know the meaning of the following words used in the Ashantee countries, &c., as they have been explained by the late Mr. Bowdich.

A **Book** or **Note**. A certificate of a monthly pension, formerly paid by the African Committee to the Fantee chiefs in the neighbourhood of the British settlements, in consideration of their attachment, influence, and services; which books or notes have been claimed by the King of Ashantee, as his by right of conquest.

Caboceer, a chief, governor, or magistrate. **Croom**, a town or village. **Custom**, a festival, carnival, public ceremony, funeral rite, sacrifice. A **Dash**, a present. **Palavar**, a dispute, a debate, argument, or suit. **Pynim**, an elder or counsellor. To **Panyar**, to seize or kidnap. **Stool**, throne, seat in council, inheritance. **Fetishe**, a charm, amulet, deity; any supernatural power or influence; anything sacred. A **Fetishe-man**, a priest.

The **System** *of* **Barter** on all the coast is that termed the *Ounce* and **Ackie Trade**;

officer in the African corps, was appointed governor in 1830. Of the very difficult nature of this worthy gentleman's office, and of the excellent manner in which the national honour was maintained by him, it would be far too diffuse to speak here. The slight slur cast on it by the Report of Dr. Madden was afterwards fully removed, and the merits of Mr. Maclean's government acknowledged by a select committee of the House of Commons. The affairs of the Gold Coast were taken more immediately under the control of the Crown in 1844, and the governorship was given to Commander Hill, R.N., and Mr. Maclean's long and arduous services rewarded by a secondary place, which he fulfilled with the utmost probity, and entailed upon him the whole judicial administration of the country. He died at Cape Coast in May, 1847, amid the tears and lamentations of the natives, and the deep regrets and respect of the whole of the white population.* Captain Hill soon resigned his appointment to Captain Winniett, who, to subdue the atrocities of a monster, Quawe Accah, king of Apollonia, undertook an expedition against him, after he had killed the French commandant of Assinee, &c., and in April, 1848, he overtook his force, and took him prisoner. The expedition, though perhaps rash, being successful, procured the honour of knighthood for Governor Winniett. At this time the King of Denmark sold his forts on the Gold Coast for £10,000 to the English, who were considered to have a good bargain; they consisted of Fort Christansborgh at Accrah, and three minor stations, Ningo, Addah, and Quittah, the latter only being habitable. The possession of these, gained in 1851, gave to the English the government of the whole line of coast between Accrah to the East of the Volta, and the control of the tribes subject to Denmark, and secured to us the advantages of the navigation of the Volta, and the resources of a country rich in palm trees, and an industrious population. Governor Sir William Winniett died at the end of 1851, without seeing the completion of his favourite scheme to make the colonies self-supporting. The Dutch, whose settlements are dovetailed between ours, having declined to impose similar customs duties, the idea was abandoned. Since that time the government has been steadily advancing, and there can be little doubt, from the desire of the natives for this progress, that it will be continuous. A small poll tax has been imposed, and has been quietly collected, and they will do much to aid this advancement.

The *currency* of the Gold Coast is represented by the Indian cowrie (*cypræa moneta*), a small shell originally exported from the East, and now diffused in vast quantities throughout Western Africa. Formerly for convenience they were perforated and strung together in definite numbers, which hence was called strings and beads. The following will explain the system:—

	Heads.	Strings.	No. of Cowries.	English value.
	0	0½	20	£0 0 0½
	0	1	40	0 0 1
	0	12	480	0 1 0
	1	48	1,920	0 4 0
1 oz. of gold dust, or	20	960	38,400	4 0 0

The value of the dollar, however, differs, and hence, consequently, the value of the cowrie is also changeable. At Cape Coast the dollar is estimated at 4*s.* 6*d.* (or 54 strings

---

every article of merchandise being estimated at so many ounces or ackies of gold; the former being the ounce troy, and the latter the sixteenth part of an ounce. The principal articles of export are gold, ivory, palm oil, gums, and pod-peppers. The cloths for the market must, generally speaking, be India, and those of the finest texture; for the extreme nicety of the black merchants, in their taste and choice, surpasses that of the most scrupulous and refined London tradesmen. In receiving gold dust, it is requisite to have the assistance of a regular native *gold-taker*, from Cape Coast; as many have discovered, much to their sorrow and loss, that the filings of brass pans are not gold! See farther, on this subject, the injunctions in Lieutenant Bold's book, page 57; and Adams's, page 104.

* Mrs. Maclean, the celebrated and accomplished lady of the governor, known to the world as L. E. L. (Letitia Elizabeth Landon), died at Cape Coast Castle, on the evening of the 15th of October, 1838. The circumstance of her death, as is well known, is enshrouded in a painful mystery, and has been made the subject of much misrepresentation. She and her husband were tenderly attached to each other, and they now lie side by side on that lone shore. Mr. Cruickshank, who was with her on the evening of her death, is of opinion she died from some sudden affection of the heart, and greatly doubts the facts or testimony that it was by her own seeking. An interesting account will be found in the 8th chapter of his first volume.

much the same facilities as St. Andrews (see page 381). The canoes made of the ceiba, or silk-cotton tree, are brought down the river, a little way from the interior, to Chama, and are purchased chiefly by the Portuguese of Whydah, Ardrah, and Lagos, in Dahomey. After passing Chama, the coast is broken by some reddish cliffs, called *Cotobray;* and you will also see a second range of high lands behind them on the coast.

The BOOSEMPRA is the western boundary of the *Fantee country*, which, after a dreadful war of extermination, may be now considered as incorporated with the kingdom of Ashantee.* The Fantees are black as jet, muscular, and well formed; and those, says Captain Adams, who are engaged in fishing, and employed as canoe men, can endure much bodily fatigue, although they are apt to make excuses for abridging their labour. Their national mark is three small perpendicular incisions on each temple, and on the nape of the neck. In the construction of their dwellings and canoes they exhibit much superiority and skill over other African tribes. The women are well formed, and many are not wanting in personal beauty, as their features are small, their limbs finely rounded, their hands and feet small, and their teeth uniformly white and even. The women here, however, as well as in most other parts of Africa, sow and reap, grind corn, carry wood and water, and perform all the drudgery attendant on housekeeping, while the husbands are recreating or sleeping. The custom of sacrificing human beings to the manes of their ancestors is common to all this country.

COMMENDA.—From off Chama you may see AKATAYKI (Ekky Tekky), or *Commenda*, which is nearly 3 leagues to the north-eastward; and where there are two small forts, Dutch and English, both now abandoned. This place may be known by a small mount on the left, called *Gold Hill*. The coast near the forts is foul, and you should not approach nearer than in 9 fathoms. To anchor, bring the English fort to bear N.W., where you will have a good sandy ground.

ST. GEORGE D'ELMINA, or ELMINA, or ADDINA, the chief settlement of the Dutch on the coast, lies 8 miles westward of Commenda. The town is considerable, and the trade with Ashantee is of some importance. It is readily known by the high and double walls of Fort St. George, and the fortifications of Fort St. James, standing on a height behind Fort St. George. The town of Elmina is divided into two portions. One is built beneath the guns of the fort, on the peninsula formed by a small river, and consists of a mass of filthy negro huts, separated by streets or lanes, not less dirty. The other part rises from the left bank of the small river; it consists of a good number of European houses, and negro huts less dirty than those of the other part. A pleasant promenade and public garden render a visit or residence at this place very agreeable.

---

* This country has been well described by the late Mr. T. E. Bowdich, in his interesting volume entitled, "Mission from Cape Coast Castle to Ashantee," published in 1819.

Under the instructions of John Hope Smith, Esq., governor in chief of the British settlements on the Gold Coast, this mission left Cape Coast Castle, for the capital of Ashantee, on the 22nd of April, 1817, in order to establish an amicable commercial intercourse with that state; for, previously, the army of the Ashantees had invaded and disturbed the whole country, more particularly Fantee, in which Cape Coast Castle and several other British factories are included. Mr. Bowdich says, that in 1807 an Ashantee army reached the coast for the first time. The Ashantees invaded Fantee again in 1811, and the third time in 1816. These invasions inflicted the greatest miseries on the Fantees. Few were slain in battle, for they rarely dared to encounter the invaders; but the butcheries in cold blood were incredible, and thousands were dragged into the interior to be sacrificed to the superstitions of the conquerors. Famines, unmitigated by labour, succeeded the wide waste of the Fantee territory, the wretched remnant of the population abandoning itself to despair; and the prolonged blockade of Cape Coast Castle, in the last invasion, engendered so much distress and hazard, that the Government, having averted imminent danger by advancing a large sum of gold on account of the Fantees, earnestly desired the African Committee to authorize and enable them to venture an embassy, in order to deprecate these repeated calamities, to conciliate so powerful a monarch, and to propitiate an extension of commerce. This accordingly took place. A treaty of peace and friendship was ratified; but it was of short duration. In 1823, war with the Fantees again raged: and the army of Ashantee was opposed by these people, headed by the gallant Sir Charles M'Carthy, governor of Sierra Leone, &c. It is needless now to say that in January, 1824, the Fantees were nearly annihilated, and Sir Charles fell in the action. So complete was the discomfiture, that the marines of H.M.S. *Owen Glendower*, then on the station, were sent to garrison our principal fort, Cape Coast Castle. [For other interesting particulars, see "*The Times*," 3rd May, 1824; and also, Eighteen Years on the Gold Coast, by Brodie *Cruickshank, 1853,* vol. i., pp. 150–2.]

Water may be got at Elmina, but should be procured from the cisterns of the fort: provisions of all sorts may be got, even bullocks, but they are very dear. It is best to use the native boats to land or embark, as the ship's boats cannot land at other times than high water, on account of the shallowness of the small river which penetrates the town.

The anchorage in the roads is in 7 fathoms, sandy bottom, with the castle bearing North, distant 2 miles; Mount St. Iago a little open to the westward of the castle; and Tantumquerry Point, East.

CAPE COAST CASTLE.*—From St. George d'Elmina you see Cape Coast Castle, 7 miles to the E. by S. This is the principal British fort on the Gold Coast. To the left of it is a small conic hill, called *Phipps' Mount*, surmounted by a tower; and by this, and other marks described beneath, the place may be readily known. The climate in the vicinity is described as generally more healthy than other parts; but even here, from June to September, during the rains and exhalations, it is pernicious. When the sea is calm, water may be obtained here, by coming to a grapnel at a little way from shore, as black boys may be engaged to swim the casks to and from the boats: but as the water is collected and preserved in tanks, it is in the dry season bad and unfit for use.

The Government Report on the condition of Sierra Leone and the other British settlements on the African Coast, which was published in 1830, includes the recommendation (in 1825) of the late Major-General Turner, to retain troops at Cape Coast and Accra only. This recommendation was subsequently adopted, and the other British establishments on the Gold Coast were abandoned.

On this place, it has been said by Captain Adams, "The Gold Coast is nearly, if not quite, as unhealthy as Sierra Leone; and if the gentlemen sent out to Cape Coast Castle were lodged, on their first arrival from Europe, 1 mile in the interior of the country, instead of within the walls of that Castle, the fact would too soon be fatally realized.

"The superior healthfulness of the Castle itself may be accounted for by its southern rampart wall being built upon a ledge of rocks which project a little way into the sea, and against which rocks the sea beats with great violence; thereby creating, at all times, a cool and refreshing current of air within the Castle. The sea breeze also blows directly into it, pure as the element over which it wings its course; and, at some seasons of the year, this breeze continues blowing days and nights without intermission."

In a concluding paragraph of the Report above mentioned, it is also said, by a physician, Dr. Barry, that no cultivation, no sanatory regulations, will ever render these settlements congenial to European constitutions, particularly to the common soldier, whose irregular habits are too strongly confirmed ever to be eradicated.

"It would appear, from the examination of Mr. President Maclean, that the prevailing diseases of which Europeans die at Cape Coast Castle are remittent or intermittent fevers and dysentery. The majority of Europeans are generally taken off between the ages of 18 and 30. This locality is considered healthy when compared with Jamaica, Cuba, or Barbadoes. The most sickly part of the year is from the 20th of July to the 20th of September. The remittent and intermittent fevers which prevail during these months (May, June, July, and August) are generally more fatal to those who have arrived from Europe late in life, than to those who arrive out young. The total abstinence from the use of spirits or other intoxicating drinks is the reverse of beneficial to those persons arriving from Europe, even when they may have practised it safely and beneficially there. Dr. Cobbold, the medical officer resident at Cape Coast Castle, when examined upon the same point, replies, 'Malt liquor I strongly recommend in moderation, as also spirits and wine; but either one or the other, the same person not using all.'" *Parliamentary Report*, 1842, *Appendix*.

The troops at Cape Coast Castle are commanded by a European. The native population of Cape Coast Castle is 5,000; European merchants, 12; missionaries, 6; and other white residents, 12 or more. The Europeans occupy about eighteen stone houses, valued at £1,000 to £2,000 sterling each. The natives live in "swish" houses made of mud, which becomes hard and durable, and they last as long as the roof resists the rain. The authorities of the Castle exercise power over the whole of the country, from Dixcove to Accra, an extent of 120 miles. Civilization is said to be confined within the limits of the Castle. The whole country about Cape Coast Castle is one great wilderness of verdure. It is only about 15 or 20 miles from the sea side where cultivation is carried on to any extent. From this distance the plantains, yams, cassava, and corn, are carried on the heads of the women to market, with their infants slung across their backs. The men treat the women in the most revolting manner, making them do all the drudgery of labour. The consequences of this brutal treatment are, the women suffer from premature exhaustion, decrepitude, and decay. The soil is poor on the sea side, but 4 miles inland it is fit for any kind of tropical produce. Mr. Swanzy made an attempt to introduce the growth of cotton and coffee, and spent much time and money in the experiment. At his death the cultivation of cotton was neglected. The cotton trees are now growing wild, and the cultivation is entirely given up. The coffee grown on the western coast of Africa is said to be nearly approaching in quality to that of Mocha; but the heavy duty, 1*s.* 3*d.* per pound, imposed on its importation into England, amounted to an absolute prohibition of its growth. The trade of Cape Coast has considerably increased of late years.

---

* The words Cape Coast appear to be a corruption of the Portuguese name *Cabo Corso* (cruising cape). See J. J. Lopes de Lima, "Ensaio sobre das Possessoes Portuguesas," livro ii., part 1, p. vii.

In a communication addressed to J. Bennett, Esq., Lloyd's, by Mr. Wm. Hutchinson, and dated Anamaboe, 2nd March, 1827, it is stated, that several vessels bound to Cape Coast Castle, &c., have run past their port from mistaking Cape Coast Castle for Elmina, and Anamaboe for Cape Coast Castle. He adds, that Cape Coast, viewed from the sea, has now a very different aspect to what it had before the rebuilding of Phipps' Tower, now *Fort William*, and the erection of other fortifications on the heights behind the town. It is the more important to know the new marks, from the consideration that, if a vessel gets too far to leeward, she cannot get back for a considerable time, nor without difficulty.

Cape Coast Castle presents an extensive front of 180 yards to the sea, but it lies low. It is also distinguished by the objects named *Fort Victoria*, *Fort William*, *Smith's Tower*, and *M'Carthy's Battery*, with the *Military Hospital*. Smith's Tower is a circular building, of which the fortified wall only is seen on a hill of red clay. M'Carthy's, or Hospital Battery, is an equilateral triangle, with a small citadel at the N.E. corner. Smith's Tower, Phipps' and Elmina Castle, in a line, bear E. and W. Smith's Tower to M'Carthy's Battery, S. 70° E. The position of the Military Hospital, lengthwise, is N.W. ½ W. The North Bastion of Cape Coast Castle, according to Captain Vidal, is in lat. 5° 6′ 10″ N., lon. 1° 13′ 51″ W.

LIGHTHOUSE.—In 1835, the President of the Committee of Merchants before mentioned (appointed for superintending the grant annually voted for the maintenance of the Forts and Factories) gave notice that a Light would be exhibited at Fort William, from the 1st of October of that year, and thenceforth continued from sunset to sunrise, for the guidance of vessels bound for the Forts of Elmina, Cape Coast Castle, Anamaboe, and the adjacent settlements.

The Light, which is brilliant, burns at an elevation of 204 feet above the medium level of the sea, and at a distance from the beach of 760 yards. It is visible to vessels in every direction, whether approaching or sailing parallel to the line of coast.

In steering for the anchorage of Cape Coast Castle, vessels ought to bring the Light to bear N. ¾ W., keeping the lead going, and to anchor in 6½ or 7½ fathoms of water; the Light being then distant about 2 miles. For large vessels, at *night*, 7 or 7½ fathoms is near enough to the beach.

"In ordinary weather the Light will be visible at the distance of about 7 leagues, and will be of great service in preventing vessels being carried to leeward of their port by the strong south-easterly current, which runs off the coast about 10 months in the year." (*Signed*, *George Maclean*, *President.*)

Upon the foregoing, *Captain Midgley* remarks (1838), "The directions for Cape Coast Roads, by Governor Maclean, are judicious, but the Light is very poor. The weather must be very clear when it can be seen 10 miles off, unless it has been much improved. I found a good and very convenient berth in 7 fathoms of water, with the Lighthouse, on with the highest part of the large black rock under the Castle, distant off-shore 2 miles.

A *time ball* has also been established here, the notice and description of which are subjoined below.*

The *Bearings from the Anchorage* in Cape Coast Castle Roads, as taken on board H.M.

---

* CAPE COAST CASTLE.—A notice dated *Hydrographic Office*, Admiralty, 1st Nov. 1839, *states that, at* Cape Coast Castle, all vessels in the Roads may ascertain the errors and rates

schooner *Prince Regent*, lying in 8 fathoms, bottom of stiff mud, were—the Castle flagstaff N.N.W., distant 1¼ miles, in a line with the hall of the Castle and Smith's Tower; Elmina Castle W. by N., 9 miles; Queen Anne's Point N.E., 3 miles; and Anamaboe Point E. by N., about 10 miles.

ANAMABOE.—In sailing from Cape Coast Castle toward Anamaboe, the remains of *Mauree*, or *Moree*, and the Dutch Fort *Nassau*, will be seen. Here you will have regular soundings of 8 and 9 fathoms, at about 3 miles off-shore. Anamaboe Fort is a small square fortification, with four bastions and four curtain walls, mounting 27 guns, lying low on the beach; and it cannot, if the preceding description be attended to, be mistaken for Cape Coast Castle, from which it is distant 3 leagues.

"Anamaboe," says Mr. Duncan, "is a town of considerable trade. It has also a very good fort, which, however, is gradually going to decay. Its ramparts are well supplied with artillery, and capable of making a good defence against an attack from the sea, if properly garrisoned, and it is quite impregnable by the natives on the land or North side."—Vol. i., p. 39.

"The only thing in the neighbourhood of Anamaboe worth mentioning as a sign either of improvement or enterprise is a good road for about 10 or 12 miles into the interior, made by an intelligent merchant named Barns, for the purpose of conveying timber to the coast." *

Anamaboe Town contains 6,000 inhabitants; but the whole of the Fantee, and other towns under this fort, might amount to 50,000. The soil along the sea-board is poor, but improves as you advance into the interior. Indian corn, yams, cassada, plantains, &c., are grown; not one thousandth part of the land is under cultivation, but it is on the increase. There are several large native towns in the interior, from 12 to 40 miles distant. The commandant of the fort is under the direction of the governor and council of Cape Coast Castle; there is a magistrate, and one resident European merchant. The fort is in tolerable repair, and garrisoned with 17 soldiers. It is better adapted for trade with Ashantee than Cape Coast; and it is thought that in a few years Anamaboe will have the greater part of the trade of the Gold Coast. The trade is principally carried on in London and Bristol ships. The legal trade with the natives has increased greatly: in 1840, the imports were £50,000; exports, £60,000.

There is anchorage at Anamaboe, directly before the town, in 7½ fathoms, with Cormantine Fort E.N.E. You may anchor in the same depth, with the flagstaff of the fort in one with the second of the Cormantine Mountains, the chain of high land seen inland to the right. The latter is considered as the best berth. Wood, water, and provisions may be obtained here.

CORMANTINE.—The former Dutch settlement of *Cormantine* lies about 2 miles north-eastward from Anamaboe; it is situated upon a hill, and affords the pleasantest prospect on the whole coast. You may anchor off it in 7 fathoms; the fort bearing nearly N.W.†

---

of their chronometers, without exposing them to the risk of being carried on shore through the surf.

A flagstaff, with a gaff, has been erected on the southern turret of the Castle; and at 11^{h} 30′ mean time, on every day, a red flag, with a white ball in the centre, will be hoisted at the head, as a preparatory signal.

At 11^{h} 55′, Greenwich time, a *black* ball, 5 feet in diameter, will be hoisted at the gaff-end, and the flag lowered; and, at the instant of noon, Greenwich mean time, the ball will be dropped from the end of the gaff, and will immediately disappear.

As the falling of the ball must occupy more than a second of time, the instant of noon is to be reckoned from the separation of the ball from the gaff.

The latitude of the flagstaff, as given in the notice by GEO. MACLEAN, Esq., *President of the Council*, is 5° 5′ 25″ N., and its longitude 1° 12′ 5″. Capt. Vidal gives the North Bastion in lon. 1° 13′ 51″, as above. Capt. W. F. Owen had previously given it in 1° 13′, or 5′ eastward of the position before assigned to it.

* Travels in Western Africa in 1845-6, by John Duncan, formerly of the 1st Life Guards.—Vol. i., p. 45.

† Cormantine, the first fort possessed by the English, was built by them about the middle of the seventeenth century. It was taken afterward by the Dutch; and, being stormed, was almost destroyed by the Ashantee army before it attacked Anamaboe. The situation is very commanding.—*Bowdich.*

The land hereabouts is generally bare, with some bushes; hills are visible in the background from time to time, some of which are in the form of sugar loaves. The coast from Anamaboe to Tantumquerry is a straight line on the same parallel, and off it the depth is less than elsewhere. Several villages are scattered along it, where there is no doubt but that refreshments might be got.

"The fort of Little Cormantine is in one of the best positions on the whole of the African coast. It is built on a perpendicular rock, 100 feet high, washed at its base by the sea. The village is a wretched *Kroom*, as villages are termed, containing 500 or 600 inhabitants, who live chiefly by catching fish, which they carry to Anamaboe."—*Duncan*, i. 49.

To the eastward of this are some other villages bearing the same name, near to one of which are the slight remains of Fort Amokou, formerly held by the French.

" *Cormantine* is in a very grand and romantic situation. It is more regularly built than Little Cormantine."—*Duncan.*

TANTUMQUERRY POINT is 6 leagues to the East (*true*) from Cormantine. The abandoned British Fort is just to the north-eastward of the point. The coast about the Point is foul, and there is a reef off-shore. Off the Fort you may anchor in 9 fathoms. The shore eastwards turns abruptly two or thee points to the northwards. At 3½ miles are the ruins of *Monfort*, which make like an islet. Some houses near it are called *Gammah*. *Apam** is above 2 miles farther.

WHINEBAH, or SIMPAH, formerly distinguished by an English Fort, is 13 miles to the eastward of Tantumquerry. The Fort was abandoned and destroyed in 1812. At 4 miles eastward of Apam is the *Devil's Hill*, a high conspicuous mountain, close to the sea side. Near this hill the anchoring ground is very good in 8 or 10 fathoms, with the hill bearing N.W.; but in 18 or 20 fathoms the ground is very foul.

From Whinebah there is a communicating path to the commercial town of *Kibbee*, in the country of the gold mines; and on the East is a small river, the water of which is good, if filled at a proper distance from the sea. The natives require a small duty for watering.

BARRACOE, or *Seniah*, having a small fort abandoned by the Dutch, is situated on the side of a woody hill, with some rocks before it, at 3 leagues to the eastward from Whinebah. It is easily known by the double hill, 770 feet high, called the *Paps*, which stands inland, at 3 leagues to the North (*true*) of it.

From Barracoe the coast trends nearly East [*E.N.E.*], 7 leagues to *Accra*, or *Inkran*;† and about 2½ leagues westerly from that place, is a small stream called the *River Sakkoom*, with a village of that name on the eastern side; and on its western is a little round hill called the *Cook's Loaf:* having passed this you will descry the high mountains inland, called the *Tafou Mountains:* then you get even land of a moderate height, as far as Accra.

ACCRA, or AKKRAH.—In a former page (387) we have given a sketch of the events which have led to the purchase and occupation by the British Government of the Danish interests in Accra, so that it is now the only regnant power; the Dutch fort being abandoned and in ruins. The actual extent of territory belonging to the British at Accra was very limited; but the influence extended a great way, say to Whinebah, 20 miles to windward; to leeward, the Danes had all, excepting one considerable town, Pram Pram, about 20 miles from this, and where there has been a small fort, or redoubt. There are no towns in the neighbourhood, except the Dutch adjoining, and the Danish about 2 miles to leeward; there are other considerable towns in the interior, which, before the British occupation, mostly acknowledged the Danes. The black population here amounts to about 3,000. There are 6 European merchants. The trade has increased latterly: the exports in 1840 were nearly £82,000; imports, about 111,000: 34 British and 31 foreign vessels visited it in the same year.‡

---

* *Apam*, the Dutch settlement next eastward of Cormantine, has been abandoned; as have, also, all the Dutch settlements eastward of Accra.

† The Portuguese first settled at Accra, about 1492; but exercising the greatest cruelties and enormities, were extirpated by the Accras, who executed the governor and his countrymen, on a spot whence they still take the earth to rub on a new-born child, in commemoration of the event.—*Bowdich.* This place has been described as the most pleasant and healthy British settlement on the Western coast of Africa.

‡ *Parliamentary* Report, Appendix, p. 75. Mr. J. Topp, Commandant.

It is to Dr. William Frederick Daniell, of the Army Medical Staff, that we owe by far the most complete account of the natives, customs, and capabilities of Accra or Akkrah, as well as of other portions of the Gold Coast. From his communication to the Ethnological Society of London, we derive the following:—

The Akkrahs, at present, only occupy a territory between the Sakkoom eastward to the small town of Tashia, not more than 15 miles in extent. From the Sakkoom westward the confines are formed by the numerous Fanté provinces; on the North the two tributary kingdoms of Akim and Acquāpim; to East and N.E. the Adampé, Aquamba, and Krepe races predominate. This small tract of coast is called by the natives *Ghán* or *Ghà*, very difficult of pronunciation. By the Fanté and other Inta nations, it has been called *Inkran* or *Inkara*, a term perhaps derived from the numerous ant hills which abound here. The principal towns are three, N'glish or English Accra, Kinka or Dutch Accra, the largest and most ancient, and Ossu or Danish Accra, now belonging to the British.

"The country in the neighbourhood of these towns presents a pleasing and diversified aspect, stretching far and wide; a succession of long and verdant uplands gradually emerge from the coast, which, as they ascend inland, become broken into a variety of gentle undulations and continuous slopes, adorned by a woodland scenery, extremely beautiful and picturesque. Advancing still deeper into the interior, these in time partake of a more mingled character, and are ultimately blended with the elevated mounts and prominent highlands visible in the distance. In these localities the soil is exceedingly rich and fertile, the native plantations, or farms, producing almost without the aid of human labour, that abundance of food which so bountifully supplies the necessities of all ranks of life.

"In the lowland regions adjoining the ocean, the land is partially divested of those primeval forests and luxurious underwood observed in other parts of the coast, and somewhat resembles one of those irregular prairies of Southern Africa, which, clothed with lank grass and a few flowers, are dotted at intervals by isolated thickets and occasional clumps of trees."*

Our limits will not allow us to do more than allude to the admirable and interesting account of the natives; in the work quoted below will be found ample particulars of the manners and customs—as dress, cleanliness—at births, marriages, deaths; the law of inheritance, division of time, currency (which we further extract), architecture, markets, harvest festivals, &c.; a paper which embraces so wide a range, and so elaborately finished from personal observation, stands alone in African Ethnography.

Accra has been a place of very considerable trade, and distinguished by three forts, British, Dutch, and Danish. The first is *Fort James*, the second *Fort Crèvecœur*, and the last *Christiansborg*. The latter was the chief settlement, or head quarters, of the Danes on the coast prior to its purchase by the British. Large quantities of ivory are obtainable at Accra, as well as gold, which the natives manufacture, in their simple way, into a variety of beautiful trinkets. The neighbouring country presents an agreeable and varied prospect, but is scantily supplied with water; although game, with all sorts of provision and stock, and excellent maize or Indian corn, abound.

The surf here is frequently very heavy and high on the beach; landing is therefore difficult, and the anchorage outside is foul. In anchoring before Accra, the red spots, seen on the sea side, are generally brought to bear North, and you lie in 7 fathoms, sandy ground; but the best anchorage is described to be with the English flagstaff N. by W. ½ W., in 6 or 7 fathoms, sandy bottom, at 2 miles off-shore. With Fort James North, there are 8 or 9 fathoms, very soft clay, which renders it necessary to come-to with a light anchor, as it is almost impossible to extricate a heavy one, when once immersed in the ground.

M. le Comte Bouët-Willaumez thus describes Accra:—Within the space of 2 miles stand the three forts of Akra; the first is the English; the second the Dutch, an abandoned ruin; and the third the Danish. The English fort of St. James is recognizable by the whiteness of its walls; three tall palm trees a mile before the fort also serve to distinguish it. You may anchor to S.S.E. of the fort flagstaff in 6 or 7 fathoms, about a mile off, on a flat of fine sand. Fort St. James is an irregular square, flanked by bastions. The European houses are spacious and comfortable, and groups of houses extend around the fort. Fresh provisions of all sorts are to be had at more reasonable rates than those to westward. Water can hardly be got but from the cisterns of the fort. The landing place is not always accessible to boats, so that canoes are best.

---

* On the Ethnography of Akkrah and Adampé, Gold Coast, Western Africa, by William F. Daniell, M.D., F.R.G.S., Assistant Surgeon to the Forces, &c., in the Edinburgh New Philosophical Journal, 1852, Vol. lii., p. 289 et seq.; Vol. liii., p. 120, and p. 333 et seq.

Leaving Fort St. James, you pass before the ruins of the Dutch fort of Crèvecœur, hardly a cannon shot off Fort St. James; you may anchor off its flagstaff in 5 or 6 fathoms water, a mile distant, but in the stormy season it is better to do so farther off. Fort Christiansborg, the principal of the Danish establishments, is a strong citadel, attesting the ancient maritime splendor of Denmark, but it is decaying. Near the fort is a very populous village, intersected by very dirty lanes. The market (well described by Dr. Daniell) is the best of any among the European establishments, and may be reached by horse or carriage from St. James' by a good and well kept road.

General Caution.—Mr. Finlaison says, that those leaving Cape Coast Castle for Accra, should be very careful that they do not overrun their distance; for if they should happen to get to leeward, it will take them some time before they work back against the swell of the sea and strong current. He recommends, that, if a ship leaves Cape Coast in the night time, it should not run more than two-thirds of the distance.

At Accra the tide rises 8 feet, spring tides. The current sets, in general, to the eastward, except in the Harmattan season, which is about the middle of January.

Beyond Christiansborg, 12 miles distant, is the ruined Danish fort of *Temma;* 5 miles farther is that of *Poree;* the latter ruins being on a high hillock. The land continues to be arid, bare, and only clothed with low bushes.

Pram Pram is a considerable native village, and large whitewashed houses stand on the hill, which overlooks the site of the ruined English Fort Vernon. Should you anchor before this, it is necessary to sound carefully to avoid the rocky ledge, 12 miles long, which extends from the shore off Poree to 4 miles off, at its East end.

NINGO.—At 2 leagues eastward of Pram Pram is the large Danish Fort of *Ningo*, now in ruins, which may be known by a ridge of hillocks to the eastward of it. The anchorage on the coast, between these places, is in general good, in from 9 to 6 fathoms, bottom of gravel and sand.

To the westward of the Fort is the little River of Ningo, which descends from the inland mountains called the *Crobo Hills*, a high range about 8 leagues inland. Of this range the summit is remarkable, being in the form of a great sugar loaf, and called *Ningo Grande*, 1,431 feet high.

From Ningo, eastward, the coast is low, being very little above the sea; and it thus extends nearly to the River Volta.

The people of Ningo, or Ningpo, speak a language different from that spoken to the westward; it is called *Adampé*, the name given to their country. The people of the Crobo Hills, though few in number, have hitherto baffled the Ashantees, by quitting their croom at the bottom of the mountain; the latter being of great height, rugged, accessible but by one narrow path, and with springs of water on the top. From the summit they roll down upon their enemies the large stones and fragments of rock which abound there.

Beyond Ningo the coasts become still lower. It is a sandy beach crowned with a line of bushes, the uniformity of which is here and there broken by some palms or dead trees. Before reaching *Occo*, 22 miles from Ningo, this aridity becomes still more monotonous, and the beach becomes only a line of sand with blackish tufts. It is a narrow tongue separating the salt lake which communicates with the Volta from the sea. Outside it is a second line of breakers. Occo stands on this sandy beach.

RIVER VOLTA.—Seven leagues eastward from Ningo is the River Volta, where the Gold Coast terminates: the land is so flat, that it is difficult to know the place, especially in coming from the westward, for then the river is not seen till it bears N.N.W.; when you descry the island, which lies within its entrance.

In running along shore for the River Volta, you will soon know when you are abreast of it, as the water changes suddenly to a dark olive colour; regular soundings all the way, and the current setting strong round the Cape St. Paul: about Cape St. Paul the land is very low, and you will not see it more than 4 leagues off; it is covered with trees.

Rio Volta received that name from the Portuguese, on account of the velocity of its stream. It pours such a quantity of water, that its quality is not altered at a great distance *in the sea;* and the colour, as well as the taste, differing from the common sea water, indicates, with certainty, the vicinity of the river. There are high breakers at the very mouth of the river, which is only 1 mile wide, and has two bluff points: one to the West, called Sandy Bluff; the other to the East, named Woody Bluff. When you come into the river, you must run in from the East side, within the breaking, as the water lies very plain in that place. Before the river is a flat, extending 3 leagues into the sea, with from 5 to 9 fathoms, soft muddy ground, which is cast off by the stream.

The entrance of the Volta has been surveyed by Mr. Finlaison; from whose survey it appears that the western point of the entrance is a tongue of land, 5 miles long, in the general direction of the coast, and having on it a little fishing town. *Adda Castle*, the Danish Fort, is on the western bank of the river, at 11 miles up from the entrance: the country between is low. The best entrance, having only 2 fathoms on the bar, lies within a mile of the western point. The course thence, to a little island within the river, is E.N.E., and then N.E., and North to Adda Castle. The depths are 3, 4, 2, 4, 3, 1½, 2½, and 3 fathoms, all toward the western shore, leaving three woody islands on the eastern or starboard side.—(*See the Plan of the River, on the Chart of the Windward and Gold Coasts.*)

The mouth of the Volta, according to Mr. Finlaison, is in lat. 5° 48′ N.* The *Tartar* anchored in 7 fathoms, off the entrance, which then bore N.N.W. Mr. Finlaison says, "We found regular soundings from the ship to the breakers, and proceeded through the East channel, after waiting for a smooth sea to enter; here we found only 6 feet of water; we pushed up the river, and pulled round the island, where we expected to find the Danish fort, but soon found that we were misinformed. There were about twenty huts on the West point, called Sandy Bluff; on our arrival, the natives fled. We returned on board through the same channel. At daylight, the commodore, Sir George Collier, with three boats, proceeded up the river, sounding all the way; and, after we got about 10 miles up the West branch, we discovered the Danish flag flying on the main land. We then landed, among 10,000 of the natives, and went up to the fort. The water, 3 miles above the fort, was flat, as far as Fetishe Island, where we stopped for two hours, and then returned. In sailing back, I observed a better channel than the easternmost one, close to the West point of the river, which I sailed through, and the least water I had was 2½ fathoms; it was about 50 fathoms broad, which I certainly would recommend as the best and safest channel."

AT-AKKOO is the nearest slave-trading port to Accra, 55 miles distant, on the East bank of the Volta. This was formerly a small fort belonging to the Danes, who claimed the intermediate territory between this and the Fort of Quitta, 30 miles to the eastward. On their establishments at these places being broken up, it fell into the hands of the natives, and subsequently was occupied by a Spaniard of the name of Mannea, as a depôt for slaves. The surf here is generally so bad as to make landing highly dangerous.

CAPE ST. PAUL.—From the Rio Volta the distance to Cape St. Paul is 5 leagues. The coast between is low and broken; and the point is covered with trees, as already noticed. At nearly a league to the westward of the point is the entrance of the *Rio Secos*, or Dry River, which runs inland nearly parallel with the coast, and communicates with Lake Popoe, &c., as shown on the charts.

REMARKS UPON THE APPEARANCE OF THE LAND FROM THE FORT OF BOUTRY TO CAPE ST. PAUL, THE SHIP STANDING ALONG WITHIN 5 AND 6 MILES OF THE SHORE. BY CAPTAIN R. WAUCHOPE, R.N., H.M.S. THALIA.†

To the eastward of Fort Boutry, the Fort of *Secondee* is seen. Its appearance from the sea is that of considerable strength; it stands close to the water, built upon a bank of horizontally stratified sandstone, of a reddish colour, surrounded on all sides, except that of the sea, by thick wood. A sandy narrow beach stretches to the East and West of it. The bare rock again appears at the termination of the beach to the eastward, and is seen in several places within 8 or 10 miles from the fort, in this direction, and then a densely wooded coast.

The next fort is the Dutch fort of St. Sebastian at *Chama* or *Assina*. This is a large white fort, surrounded by natives' huts, having a long narrow slip of white sandy beach to the West of it: the beach is broken to the eastward, for above 3 miles, by the wood extending to the water's edge; when again a long narrow beach continues for 8 or 10 miles, and the red cliff is seen, bare of vegetation in several places. The land not high, but entirely covered with low wood.

---

* According to Captain Vidal, it is in lat. 5° 46′, lon. 1° 41′ E.

† These remarks were first given in the *Nautical Magazine*, No. 45, 1835; but the year in which they were made is not mentioned.

The next fort is the Fort of *Commenda*, or rather the two forts. They may be seen at the same time with Chama. One of the forts, of a dark gray stone, a square building, seemed to be in tolerable repair; the other, about a mile to the eastward, was a complete ruin. A number of native huts were near the forts, and a great number of canoes were hauled up on the beach.

From thence to the eastward, the two large and magnificent-looking forts (Dutch) of *St. George del Mina*, or Elmina, make their appearance, as if newly whitewashed, and are of a dazzling white. On approaching them, we observed, about half a mile apart, two other small forts; the one to the westward being round, and the other square. The western large fort is situated upon a rising rocky ground, about 70 feet above the level of the sea. The eastern large fort stands on the beach, in the middle of a considerable-sized village. Some of the houses are of stone, but it chiefly consists of miserable-looking huts. To the eastward of Elmina, the same low, undulating, wooded line of coast stretched along, with a narrow strip of sandy beach.

Soon after Elmina is clearly made out, the round tower (Phipp's Tower, now Fort William) of Cape Coast Castle is seen rising magnificently from the sea; it is built upon rising ground to the rear of the Castle, and is the first object which is seen. On approaching, the handsome and extensive castle of Cape Coast is clearly seen; and, on landing, the interior does not disappoint expectation, as the whole of the buildings are in admirable repair. A few miles to the eastward of Cape Coast Castle, the ruined English Fort of *Moree* is seen. The mud huts of the natives still surround the square brown ruin. Still farther to the eastward, the small Fort of *Anamaboe* is seen. The appearance of the coast is similar to what we have already passed, viz., a narrow sandy beach, rocky in some places, and low undulating hills, covered with low underwood behind.

A few miles to the eastward is the ruined, square, and brown Dutch Fort of *Cormantine*, situated on a pretty rocky green hill, close to the sea. The natives' huts extend to the westward of the fort, and to the eastward the same description of coast as that above mentioned. At 5 leagues to the eastward of Cormantine, *Tantumquerry Point* is seen; it is low and rocky. There is a reef of rocks lying about a mile to the N.E., on which the sea was breaking when we passed it. On first seeing the Point, one fort only is observed; on approaching, another square brown fort, nearly joining the former, is seen, and the low land becomes visible beyond the *Devil's Hill*, which is the highest hill on the coast between Cape Three Points and Accra.

When abreast of Tantumquerry Point, the Fort of *Apam* is seen to the left of Devil's Hill; a brown ruin of considerable size. A large native village surrounds it, except to seaward. Along this whole line of coast (for we have run it down within from 4 to 6 miles) there are native villages to be seen at intervals, consisting of thatched mud huts. The next fort is that of *Whinebah*, now in ruins. When abreast of this you can just see Tantumquerry Point, and the Fort, to the westward, and *Barracoe Point* to the eastward. *Whinebah* stands upon a low line of hills, having nothing particular to mark it, except a whitewashed thatched house of considerable size on the beach, and the ruins of a fort a little to the left. There is high land in the distance.

The next point is *Barracoe Point*, with a very remarkable palm tree upon it; and to the eastward of it, considerably higher than the low land, the peculiarly shaped double hill, called the *Paps*, is seen in the distance: this and the palm tree point out its situation very distinctly. On nearing the Point, the fort, and flagstaff, and native village, are seen, and the distant coast beyond, terminating in a very low point.

On rounding Barracoe Point, the Paps are much more distinctly seen, being much nearer; and the remarkable hill called the *Cook's Loaf*, a conspicuous round hill, is seen close to the sea.

ACCRA.—The land to the West of the Cook's Loaf appears very low, and to run out to a very low point, having still the very narrow strip of sandy beach; and on the Point the three white Forts of *Accra* are seen, and a fourth, the Danish, 3 miles to the eastward. The English and Dutch are within a mile of each other; so that the coast about Accra is particularly well marked.

We sailed from this on the 17th November; and on the 18th hauled in for the land, and found ourselves in the morning abreast of *Ningo*, a Danish Fort. It is a good-looking whitewashed fort, apparently in good repair, about 7 miles off-shore. The water shoalens to 7 and 6 fathoms; a little further out, 12, 13, and 14 fathoms; and all the land seen to the eastward appears very low indeed.

The marks for Ningo in the Sailing Directory are some hillocks to the eastward, and the high conical mountain of Ningo Grande inland; the hillocks I could not make out clearly. When abreast of Ningo, a small fort is seen to the westward, which is, I suppose, the Fort of *Pram Pram*. There is the same narrow line of sandy beach, as we have observed all along, to the westward of Pram Pram still. Another white house or fort may be seen when abreast of Ningo. To the eastward, the tops of trees only are to be seen, the land being so low. Six and seven miles from the shore, the soundings along the coast are 11 to 13 and 14 fathoms, coarse sand, and in some places rocky bottom.

A great quantity of sea weed was seen to the eastward of Ningo; the first we met with on the coast. Abeam of us, about 1^h p.m., some miles to the eastward of Ningo, observed a flagstaff, and two large thatched houses; a number of naked negroes; and on the beach was a great deal of surf. The wood on the coast here consists chiefly of a peculiar kind of palm, the stem similar to the cocoanut tree, but the upper part more bushy, and similar in appearance to the silver tree at the Cape [*Good Hope*].

At 3^h p.m., 18th November, saw the mouth of the River *Volta*, bearing N.N.W. It is on this bearing alone upon which it can be seen. The two bluff heads at the entrance appear very bold, and make the mouth of the river very obvious. In standing along to the eastward, the entrance was not seen above five minutes, as it was soon shut in by the eastern bluff.

The whole coast to the eastward of the Volta, to *Cape St. Paul*, is very low; nothing but trees are seen. In 9½ fathoms off the Cape this is its appearance; nor could the Cape itself be made out, except from the trending away of the land to the northward.

V.—THE BIGHT OF BENIN, FROM CAPE ST. PAUL TO TERRA FORMOSA.

Its western point, *Cape St. Paul*, has been described: its eastern extremity has been called *Cape Formosa*. In both cases, the appellative *Cape* has been most improperly applied; for these extremities, as well as the intermediate coast, are very low. It has, moreover, been determined by survey, that on the eastern side, there is not even a projecting point to which the characteristic of *Point* can apply. This is the reason why different spots of land have been, from time to time, assumed as the *Cape*, and misrepresented accordingly.

The whole of the coast, between the Rivers Benin and Old Calabar, is very low, and almost uniformly level land; the only visible inequalities being caused by the growth of the trees, which in many places spring up out of a swamp; the land being overflowed at high water, in some parts, for miles. Near the sea coast are numerous creeks, navigable by large canoes, and forming a communication between the above rivers,—and I have been assured, even so far as Lagos and Whydáh. To use the words of Dr. Boyle, in his work on Fevers (I quote from memory), "This coast is forbidding in its aspect, dangerous to approach, repulsive when examined, and disgusting when known."—*Capt. T. Midgley.*

QUITTA, &c.—The former Danish, but now British Fort of *Quitta* is 4½ leagues to the N.E. of Cape St. Paul. It is nearly abandoned. The land between is low and marshy, almost even with the surface of the sea. The Fort is included in an independent State of Kerrapay, called *Agwoona*, which extends thence along the coast to the Volta. There are six towns* between, the principal of which is Agwoona, and the caboceer of this place is supreme over the others, but not absolute.

---

* "The Spanish and Portuguese names of the places on this coast, are the remnants of the former extensive slave trade carried on by these nations, and are often confounded with the native names. Thus the names of Padiena, Mina Chica, Cogmoa, Porto Seguro, are confused with those of Dumflou, Pawrey, Guigliou, and merely designate half a dozen unimportant villages lying between Quitta and the large village of Little Popoe."—*M. le Comte Bouët-Willaumez.*

Plenty of stock, &c., can be obtained at Quitta; and there is also a good anchorage in 5½ fathoms, fine sand, with the Fort bearing W. by N. 2 miles.

Between Quitta and Popoe are four Kerrapay towns, governed by caboceers, independent of each other, as well as of Agwoona. From Quitta to *Acquijah*, the distance to the N.E. is nearly 3 leagues; and it is nearly the same from the latter to *Paurey*. The coast flat all the way. From Paurey the coast trends easterly to Gugligou, 4 leagues. The last may be known by four hills on the coast to the eastward of it,—the only eminences hereabout, and from which the town called *Little Popoe* is *true East*, 4 leagues.

Before reaching Little Popoe, the coast loses its aridity and becomes green and wooded at the village of *Fish Town*, but after passing this it again becomes the barren sand, bare of vegetation, except a few stunted trees; and before seeing Little Popoe it becomes entirely bare of vegetation. The mass of blackish houses at the latter place, therefore, are very plainly to be seen: a few palm trees only are to be seen near it.

POPOE.—From Quitta to Little Popoe, about 12 leagues E. ¾ N. [*N.E. by E. ½ E.*] the coast, rounding regularly, forms a bight, in which from 7 to 15 fathoms may be found at 4 leagues from the shore.

LITTLE POPOE* is, or rather was, one of the most extensive slave factories on the coast; it is close to the water side, and has a very bad beach to land on. The Dutch once had a factory here, but no sort of fortification. A little river, the mouth of which is choked up with mud, runs by the town, within the beach; but fresh water is not to be gotten off without great difficulty. You may anchor, with the town bearing North, in 9 or 10 fathoms, coarse white sand.

A lagoon, navigable for canoes, extends parallel with the whole of the coast of Benin. It is separated from the sea by a tongue of sandy land of very variable breadth, and consisting sometimes of pure sand. At Little Popoe, this sandy neck is not more than 2 cables' length wide; the native village is built on it; and the European factories are erected on the opposite side of the lagoon; their white walls are not visible till the meridian of the village is passed, and then they appear as if connected with the native houses. The bar of the beach is more accessible at Little Popoe than elsewhere, by means of the country canoes.

GREAT POPOE is 7½ leagues E. by S. [*E. ¾ N.*] from Little Popoe; and 4½ leagues farther, in the same direction, is WHYDAH. The coast between is low and swampy, spotted here and there with trees. Great Popoe stands on the West side of the entrance of the river, falling from Griwhee, and which is 4 leagues to the eastward. Maize in any quantity, and very cheap, may be obtained at Popoe. The bar being bad, with a high surf, requires occasional attention as to the time of landing.

WHYDAH.—At this place are three factories, formerly in possession of the English, Portuguese, and Dutch, the natives of which still speak the different languages, and are severally governed by caboceers, or chiefs, who style themselves of the country to which each factory formerly belonged. The houses are well constructed, and generally two stories high. One of the forts has been somewhat restored by the French, and is now used as a palm oil store by the Marseilles merchants.

Two leagues to the westward of Whydáh Road lies, on the flat shore, a remarkable hillock, called *Mount Palaver;* and 1 league westward from it you perceive three or four groves of trees, the westernmost of which is the largest: in the middle of these groves stands one tree, of a prodigious height, appearing, at a distance, like a tower. There stand also, about a league westerly from Whydáh, close to the sea side, two trees, with great round tops, which are called the *Two Brothers*. These trees serve as a good leading mark for the town, off which there is a convenient roadstead in 8 and 7 fathoms, muddy bottom, 2½ miles from shore, with the town N. by E. and the *Brothers* N.N.E.

"On my passage," says *Captain Midgley*, "thence to the Whydáh, I kept a good lookout for *Mount Palaver* and the *Two Brothers;* but for many miles to the westward of Whydáh could make out no particular whereby to distinguish the coast. Whydáh is, however, easily found, as there are always vessels lying in the roads; but, should this not be the case, keep the beach in sight from the deck, when several low houses or sheds, with a high flagstaff, will be seen close down upon the beach; and, with a good telescope, the town will be seen from the deck, about 3 miles inland. Anchor in any depth you choose with the flagstaff N. by E., or North, as the ground is all clear and good. No ship's boat can land here.

---

* Thirty miles East of Little Popoe is Whydáh, and 80 miles East is Lagos. These two *ports are the greatest slave depôts in the world. I have seen 13 vessels lying in the former place at one time.—Captain Broadhead*, 1841.

To the eastward from hence stands a thin wood, which extends along shore to a great distance.

After leaving Whydah you must, to make out the points connected with the villages, keep very close in-shore. Some of these villages are very considerable, and are more or less embosomed in trees.

GRIWHEE, or GREWHE, is represented as containing 6,000 or 7,000 inhabitants. In passing to it from the sea shore, near Whydah, a lagoon is to be forded, which is a quarter of a mile over, and the same distance from the beach, to which it runs parallel westward, and communicates with the sea at Popoe.

The country surrounding Griwhee is fertile, open, and level, exhibiting large savannas covered with high grass, although in some parts thickly wooded with fine grown trees. To the North of the town are some well cultivated lands, producing peas, calavancies, maize, and yams; over which passes the road leading through the towns of *Xavier* or *Sabec*, and *Toree*, to Abomey, the usual residence of the king of Dahomy.

Ivory is here most abundant, being constantly sent from the inland towns, northward, by corresponding traders to the coast. The ounce and ackie system still prevails, and requires nearly the same assortment of goods as to windward; but the trade is transacted on shore.* In running along the coast to the eastward from Popoe, in 8 fathoms, Griwhee Town may be seen from the deck, by means of a good telescope, at about 3 miles from the beach, there being scarcely any wood to intercept the view; and thus you can easily gain the anchorage of Whydah. From Whydah the coast trends E.S.E. ¼ E. [*East*], 27 leagues, to *Lagos*. In this course, at the end of the first 7 leagues, you come to *Appi*, or *Appee*, formerly a kind of English factory; the village is about 4 miles inland. Between it and Whydah lies *Jackin*, a small town upon the beach, which has ceased to be a place of trade.

PORTO NOVO.—At 3 leagues eastward from Appee is *Porto Novo*, the port of Ardrah, distinguished by beachmen's huts on the shore. Porto Novo is, therefore, 10 leagues to leeward of Whydah. Here you may anchor before the town, in 7 or 7½ fathoms, black clay, with shells.†

ARDRAH‡ (or ARADAH), the capital of this name, is about 8 leagues from the sea, to the northward. In advancing on land to this place, it will be found that the first mile of road from the beach is sandy; it is then requisite to embark in a canoe, to navigate a swamp half a mile wide, which is the eastern termination of the lagoon having its entrance at Popoe. This swamp is entirely covered with wood, excepting the crooked passage through which the canoes pass; and alligators, which are the *fetishe* of the Ardrahs, are to be seen in it in great numbers. The remainder of the road is over a variegated country, part of which is thickly wooded and swampy, but the greatest portion open and park-like, perfectly level, and interspersed with trees. The village of *Wacca* is at two-thirds of the distance from the sea to the lake; and there is another village on the margin of the lake, near which is the place of embarkation for those going to Ardrah.

BADAGRY.—At about 4 leagues eastward from Porto Novo is the roadstead of BADAGRY. The town of this name is 3 miles from the beach, and situated on the North bank of the lake or river that descends from Ardrah into Lagos River, and is at Badagry about 200 yards broad. A shrubbery intercepts the view of the town until the river is very nearly approached. The anchorage in the road is pretty good, in 6¼ and 7 fathoms.§

---

* See Lieutenant Bold, page 61, and Adams, page 106. Little gold is seen to the eastward of Accra, as the country does not produce it, and the use of it is almost unknown to the natives of Whydah, Ardrah, Lagos, and Benin.—*Adams.*

† M. le Comte Bouët-Willaumez states that he broke open an armory abandoned for half a century, at Whydah, in 1839, when he found from documents that Porto Novo was a dependence of the French establishment at Whydah.

‡ The natives call Ardrah, *Aratakassee*, or Allatakassee, and the country *Essäam*, or the Great.

§ The late respectable and respected *Richard Lander*, in the Journal of his Expedition to explore the course of the Niger, has given a pleasant account of his sojourn at Badagry, where he landed in 1830. On the 22nd of March he debarked from on board the *Clinker*, and having been taken into a canoe, at the edge of the breakers, it plied over a tremendous surf, and was

From Lagos Entrance, the shore extends about 27 leagues to the eastward, with very slight inflections, and a sandy strand all along; within land, about 1¼ leagues from the shore, and almost parallel to it, runs the river or creek, which, from Benin River, enters Cradoo Lake. It is bordered with trees for about 18 leagues, or as far as the East end of Cradoo Lake; then it appears naked, the trees standing farther inland, and along the creek. These are remarkable by being red-topped; and they go no farther than the sandy strand; at the end of which is, or was, a tall, spreading, solitary tree. There you may anchor, at 2 miles from shore, in 4½, 5, or 6 fathoms, muddy bottom.

M. de Bouët-Willaumez says that he passed close along this coast, which by the English and French charts has been represented as uninhabited, but found amidst the groups of trees which stood on the shores the villages of *Ybeyo*, *Obaze*, *Bughighe*, *Ochoro*, *Leshé*, *Chision*, and *Ezi*, to which succeeded the village of *Ode*, or *Oddy*, which is larger than the others, and points out the true limit of Curamo Island. Here is met with the first indication of the efflux of the great River Niger; the soundings from the West up to this point are sand; beyond it, to the south-eastward, mud.

All this coast, inhospitable and very little frequented, is, for the most part, drowned occasionally by the sea, or by the heavy rains in August and September.*

BENIN RIVER, OR RIO FORMOSA.—From the tall spreading tree above mentioned, the coast trends S. by. E. ½ E. [*S.E.* ¾ *S.*], 3 leagues, to a small fishing town on the beach; and between are several clumps of high trees. The coast continues nearly in the same direction 7 leagues farther, to the entrance of BENIN RIVER, or *Great River Formosa;* and this part shows like a green, low, bushy strand, in front of a thick row of trees, of regular height, and with a few insulated huts or houses. The shore is sandy, and the depths 4½ and 5 fathoms at 2 leagues off, but less off the mouth of the river.

On advancing toward this place from the westward, strangers have been advised to keep on the parallel of 6° N., and make the land near the fishing town above mentioned, and thence stand along shore to the N.W. head of the river; thus they avoid over-running their distance, and making the rivers to the south-eastward, which might be dangerous.

The course from Lagos to Benin River is S.E. [*S.E. by E.* ¾ *E.*], and the distance 32 leagues. In running toward this river, the water in general will be found to have a dark green colour, and be more shallow than any other part of the coast. The current between sets to the eastward and S.E.

According to the late survey of the Bight of Biafra, &c., by Captain Vidal and the officers of the *Barracouta*, the N.W. point of the entrance of Benin River is in lat. 5° 46′ N., lon. 5° 4′ E., which agrees very nearly with former results.

Lieutenant Bold states that, since the abolition of the slave trade, the River of Benin has been nearly deserted; the natives having ceased to come outside the Bar. This may not, however, be always the case; and we shall therefore subjoin a description of the river, &c.; premising, however, the necessity of being well manned and armed, several vessels having, at different times, been seized by the inhabitants.

The River Lagos falls from the North into the West end of the lake, as represented on the chart, and is of great breadth, having 10 fathoms of water near the entrance. Its current is impetuous; and floating islets, with large masses of alluvial matter, come down with such force, in the rainy season, as to trip vessels in the English Road from their anchors.

* The following note may, perhaps, not appear improper in this place:—

From Sherbro to Rio Formosa, or River Benin (which is the part of Africa with which Europeans are best acquainted), a tract of 1,400 miles of sea coast, there is not one navigable river, bay, or harbour, into which a ship can enter; nor is there one river or creek (the Volta and Lagos excepted), into which a sailing boat can advance 10 miles from the sea; very few of the creeks will even admit a boat; and not one on the Gold Coast, except at Chama and Elmina: a small boat may row up the former about 2 miles, and up the latter about a quarter of a mile.

The shores are, almost in every part, difficult of access, from the heavy surf which breaks upon the beach; it is scarcely possible to land anywhere but in a light canoe, and even in that way it is frequently impracticable for many days together; in many parts, besides, there is, near the shore, scarcely water enough for a canoe; and the breaking of the waves becomes there so impetuous, that all communication between the shore and the shipping is frequently interrupted for three weeks together, and can seldom be effected with safety.—*Dalzel.*

According to Captain Adams, whose acquaintance with the country was previous to 1800, the country called Benin is of considerable extent, and situated principally to the North and N.W. of the principal river. Into this river, at 3 leagues from its entrance, on the North side, is the mouth of a wide and deep creek, leading to a town called *Gato*, or *Gatto*,* whence it has its name. At Gato, vessels trading with Benin have their factories. Craft of the burthen of 60 tons can navigate this creek to within 4 or 5 miles of the town, which is more than 10 leagues distant from Benin River; and the first dry land which appears, after entering, is near Gato,—the intermediate country being a morass, covered with an impenetrable forest.

It was the practice here for masters of vessels to pay the king a visit soon after arrival; and "such a ceremony is seldom to be dispensed with; as, on these occasions, the black monarch receives a handsome present, consisting of a piece of silk damask, a few yards of scarlet cloth, and some strings of coral."

The course of the road from Gato to the capital, *Benin*, is about N.E. by N., and the road passes over a country perfectly level, intersected with deep woods and swamps.

The face of the country surrounding Benin bears much the same character as that of Ardrah and Griwhee, excepting that it is more thickly wooded. The town is large and populous, containing about 15,000 inhabitants: it is built very irregularly, without any regard to order, and the houses are detached; consequently it occupies a large space.

The king of Benin is fetishe (sacred), and the principal object of adoration in his dominions. He occupies a higher post here than the Roman Pontiff in Catholic Europe, and is considered not only as the vicegerent of Deity, but as a deity himself, whose subjects both obey and adore him as such. But, with all his fine attributes, he seems generally to have treated Europeans with courtesy—especially those armed with acceptable presents. The king and his courtiers are ostentatious in their dress, wearing damask, taffety, and cuttanee, after the country fashion. Coral is a very favourite ornament in the royal seraglio, which is always well filled; and the women wear a profusion of beads, if they can obtain them. He was visited in 1838 by Messrs. Moffat and Smith, who found him to be a robust old man, who affected much dignity and would not allow them to approach his person. They were hospitably treated, but had many painful proofs of the barbarity of the inhabitants: in several places human remains were exposed in the most disgusting manner.†

The land about the town is fertile, although but little of it is cultivated. Sheep, goats, pigs, poultry, and yams, are plentiful and cheap; there is here, also, a breed of small cattle. Cotton, indigo, and the sugar-cane, appear to be indigenous.

BENIN RIVER is 1¾ miles wide at its entrance from the sea, and has across it a bar of mud, clay, and sand, extending out a league to seaward, and on which there are only 12 feet of water at spring tides.‡ Vessels not drawing more than 9 or 10 feet may generally pass it in safety, by taking the proper time of tide. At a few miles from the sea, this river is only half a mile wide; and, at New Town, or Young Town, which is 6 leagues up, little more than 400 or 500 yards. Two branches near New Town, called *Gato Creek*, and *Warree Creek*, are nearly equal in magnitude to the main trunk: one, running to the N.E., communicates with Gato; and the other with the River Warree or Forçados and other rivers forming a portion of the delta of the Niger, and continues up to the Niger, from which it diverges a little below Eboe. The direction of the main trunk is about E.N.E.; and according to the report of the natives, at about 50 miles up, it is not navigable for vessels of 50 tons. The depth of water in any part does not exceed 4 fathoms.§

---

* Belzoni, the celebrated traveller, died of dysentery at Gato, on his road to Haussa and Tombuctoo, November 26th, 1823, and was buried there on the following day. A wooden tablet to his memory still remains (1838). *Dr. Daniell* says, his grave is now an elevated mound of earth, overrun with weeds, with the fragments of a decayed wooden cross.

† For an account of their visit, see Journal of the Royal Geographical Society, Vol. xi. p. 190.

‡ See the particular plan of the river, on the chart of the Windward and Gold Coasts.

§ RIVER BENIN.—The following extract is from the voyage of Captain Owen, Vol. ii., pp. 358-9.

"Palm oil and ivory are now the only articles exported in British ships from any of the numerous rivers between the Bonny and Benin; but as this is more profitable when obtained in large quantities, those only that can admit vessels of burden are resorted to, of which the

1846. The Old Pilot has noted that it flows in three hours, but ebbs in nine. The rapidity of the tide, in the rainy season, very often carries away marshy fields, of some acres extent: you must be careful to steer the ship clear of them; otherwise, should they come athwart her, they will give you a deal of trouble.

In April, 1840, Mr. Becroft, in command of the *Ethiope* steamer, manned by fifteen Europeans, and a full complement of Kroumen, ascended the *Benin* or *Formosa*, with the intention of penetrating, if possible, to the upper course of the Niger or Quorra, and by this means avoid the pestiferous swamps of which the lower part of the delta of this river is composed.

For about 40 miles from the sea, including windings, he found the Formosa Fermosa a fine bold river, with from 6 to 3 fathoms water. At this point a bifurcation took place; both branches proving to be highly tortuous, and much narrower than the main branches of the river, but having a depth of not less than 3 fathoms so far as the steamer was able to ascend them. This Mr. Becroft computed to be from 40 to 50 miles on the one, and from 60 to 70 miles on the other, including windings. His further progress was obstructed at these respective points; not from want of water, for that continued as deep as before; but from the impenetrable forests of large aquatic plants, which choked up the streams in both branches, so as to render a further passage impracticable, except by cutting a *way* through them, which could only have been accomplished by considerable labour, and with great loss of time. Having satisfied himself that the Fermoso is *not* a branch of the Niger, but, probably, rising in the high lands to the N.W. of that river, he returned to the mouth.

He afterwards entered what may be called the Warree branch of the river. This branch they entered by passing through a creek of some magnitude, called *New Town Creek*, mentioned above, flowing out of the Benin to the southward: they succeeded in reaching the Niger at the point of bifurcation with the Nun Branch, a short distance below the town of *Eboe*, in lat. 5° 27′ N.

In their progress thither, they passed three openings or passages to the sea, which they presumed to be the Rivers *Escravos*, *Forçados*, and *Ramos*, as laid down in the charts. This navigation occupied a fortnight, during which time sickness appeared among the Europeans, of which five ultimately died.*

From Benin River to the southernmost land of Formosa, the coast of Warree extends south-eastward 39 leagues; and within this space it is broken by several rivers, as the *Escravos* or *Escardos*, *Warree* or *Forçados*, *Ramos*, *Dodo*, *Sengana*, &c. The coast is altogether a low, swampy, and unhealthy country, with a sandy shore, thinly inhabited, and, of course, but little frequented.

The first river, southward of Benin River, is the River Esclavos, or Slaves River, known also in native parlance by the name of *El Broder*, or *Brodero*. Its entrance is 14 miles S. by E. ½ E. [*S.E. by S.*] from Benin River. There are only 12 feet of water (and perhaps less) at the entrance; and off its South point the bank stretches a good way into the sea. Adjoining its entrance is a small town erected on the margin of a sandy beach, and which is encompassed and partially hid from view by a profusion of palm and cocoanut trees.—(*Dr. Daniell.*) This river communicates with that of Warree.

The RIO DOS FORCADOS (Galley Slaves River), or River Warree, or Owerree, is 5 leagues to the southward of the Esclavos. The coast between winds round to the eastward. The entrance is in lat. 5° 21′. It is wide, with an island in the centre. *Dr. Daniell* says:—"Both this and the Esclavos, from their shallow estuaries, are seldom or never frequented, unless it be by slave ships, although, in the seventeenth and eighteenth centuries, the Portuguese and Dutch carried on a lucrative commerce with them, especially the latter. At the distance of 3 miles from the entrance is the island and town of *Paloma*, the latter consisting of from twenty to thirty dilapidated houses, situated on the left bank of the stream. The inhabitants transmit what little palm oil they produce to Jackree; the majority of them are now fishermen, and chiefly occupied in the curing of fish. Formerly the Portuguese had a fort, chapel, and three or four factories in this town: but they were soon abandoned, on account of the extreme insalubrity of the climate. Jerome Merolla da Sorrento, in his *Voyage to the Congo*, informs us that two Capuchin missionaries, named B. di Firenza and A. Aiaccio, sailed from the island of St. Thomas in 1683, to visit the metropolitan town of Warree, which by this route is about 16 miles to the N.E. of Paloma. They were the first persons that attempted to introduce Christianity into equatorial Africa, and it has been stated, converted many of the natives to its doctrines. Captain Adams states, that when he visited the town of Warree, he observed the several emblems of the Catholic religion, within the edifice in which these missionaries were wont to perform their religious ceremonies, still existed, and that 'a large wooden cross, which had withstood the tooth of time, was remaining in a very perfect state in one of the angles formed by two roads intersecting each other.' Vestiges of the building and ancient reliques may still be seen; but the cross, when I visited the spot, had wholly disappeared."*

---

* *Journal* of the Royal Geographical Society, Vol. xi., 1841, pp. 184—190.

Without the river there is anchorage in 7 fathoms, muddy ground. In the entrance are only 2 fathoms, and care must be taken to avoid a flat which extends from the S.E. side.

The RIO RAMOS (or Bough River) is 17 miles S. ½ W. [*S. by E. ¼ E.*] from the River Warree. Its mouth is in lat. 5° 5½′. The entrance is not quite a quarter of a mile in breadth, and, having no island in the vicinity, it may be easily distinguished from the former river.

The RIO DODO is 20 miles S. ¼ W. [*S. by E. ½ E.*] from the Rio Ramos. It is small and little known. The natives of the coast are said to be ferocious; and are, therefore, to be avoided. The shore continues low and woody.

From the Dodo to a point commonly, but very improperly, called *Cape Formosa*, the distance is 20 miles. The coast between rounds more to the eastward than the coast to the northward, or S. by E. ½ E. [*S. E. ¾ S.*] This point lies in 4° 31′ N. and 5° 41′ E. The land hereabout is so low, that the trees upon it seem to stand in the sea: you therefore have them in sight before you descry the land. From 15 fathoms, neither trees nor land can be seen. At 6 or 7 miles from shore, the depth is 5 and 6 fathoms. Between the Rivers Dodo and Sengana, there are the branches named in the Admiralty survey, *Pennington* and *Middleton Rivers*, and the *Winstanley Outfalls*.

CURRENT.—In the months of July and August there is always hereabout a strong easterly current; so that it is proper, when you sail along the coast, to keep off at a considerable and safe distance; not approaching nearer than in 8 fathoms, which is 2 or 3 leagues from land. The bottom is commonly so deep in mud, that the lead immersed in it is raised with difficulty.

South-eastward, about 10 miles from the point above mentioned (in lat. 40° 31′), is a small river, called the SENGANA, or SENGMA. On the North bank of this river is a small town, enveloped in trees. On advancing, with the creek open, it shows with low land on the western, and a steep bluff on the eastern, side. The coast thence to the *River Nun* or *Quorra* is bluff and level. The distance between is about 3 leagues. The Bar of the Nun, otherwise Quorra, according to the late survey, is in lat. 4° 16′ N., and lon. 5° 56′ E.

"The River Sengana is the southern extremity of the Bight of Benin, and the obvious projection of the land in its vicinity may therefore be termed with more propriety Cape Formosa. This Bight, comprising a tract of coast of nearly 360 miles in extent, and excluding some parts of the slave coast, may be merely considered as one vast and almost interminable forest swamp, whose continuity is broken by the petty rivers and creeks that meander in all directions through it. It is, without exception, the most deadly portion of the West coast of Africa."—*Dr. W. F. Daniell.*

THE RIVER NIGER, NUN, OR QUORRA.

We have already shown in the note, p. 401, the commencement of the Expedition of Messrs. Richard and John Lander; and have now to add, that, under various perils and disadvantages, the Landers proceeded through the country, to the north-eastward, until they reached *Yaoorie* or *Youri*, near the eastern bank of the *Quorra*, in the latitude of 11° 10′ N. or thereabout, and thence descended to the sea, by the stream ultimately found to be that called the *River Nun*, eastward of Terra Formosa, which they reached in January, 1831.

This important discovery produced the Expedition into the interior by the steam-vessels *Quorra* and *Alburka*, in 1832, 33, and 34, of which a Narrative has been drawn up and published by Messrs. Laird and Oldfield, surviving officers of the expedition.* These interesting volumes show how far it may be practicable to open a direct commercial intercourse with Central Africa by the navigation of the river. "It is quite true," says an intelligent writer, "that the bold attempt failed; but the circumstances under which it was made deserve to be taken into account, before the experiment be utterly abandoned as unattainable. The chief difficulty with which the travellers had to contend was the climate, which produced excessive mortality among the crews. Against this no human skill can provide; but the authors prove that there is nothing else to prevent a communication with Central Africa by this route, though the contrary has been affirmed. Mr. Laird, in alluding to the experiment, says distinctly, 'It has proved that any man, with common sense and common ability, may ascend and descend the main artery of Africa (provided he escapes the effects of the climate) with perfect safety, in moderate-sized vessels, from the sea to Boussa.' (Between 10° and 11° N.) The expedition, in so far, cannot be said to have proved altogether useless.

---

* Sketches of the Medical Topograpy, &c., of the Gulf of Guinea, by W. F. Daniell, M.D., F.R.G.S., F.E.S., pp. 63, 64.

"It is clear that a wide field is here open to the labours of the philanthropist; for that the people still remain in the lowest depths of mental darkness appears indisputable."

Boussa, or *Boossá*, is the place where, thirty years before, the adventurous Mungo Park unhappily perished.

Three months after leaving Liverpool, the expedition arrived at the mouth of the River Nun. The bar was crossed with some difficulty; but what threw the most inauspicious gloom over this stage of the enterprise was the death of the captain of the *Quorra*, and one of the engineers, so soon as the vessel was within the river. Nevertheless the steamers proceeded to ascend the stream, the *Columbine* being anchored to await their return, within reach of the sea breezes. For a distance of 30 miles up the river there was no land, not even mud, visible; the mangrove trees alone marking the channel. The inhabitants of this swampy country had a most miserable appearance, being covered with ulcers, Guinea worms, and cutaneous eruptions. The river, as it was ascended, grew wider, the banks were higher, and thick woods of stately trees succeeded to mangrove thickets. *Eboe*, at 140 miles (nautic) up the river, lat. 5° 40′, was the first town of any importance reached by the voyagers. This town stands by the side of a creek running nearly parallel with the Quorra, and in the flooded season communicating with it at both ends. On a rough estimate the town consists of 800 to 1,000 houses; and allowing on an average six people to a house, will give the amount of population, two-thirds at least of which may be considered as under fourteen years of age. The inhabitants are the most enterprising and industrious traders on the Quorra. The town itself, with its immediate vicinity, is unhealthy, owing to the swampy nature of the ground; few old people of either sex were seen, and a great number of young men appeared debilitated and aged.

The staple trade of Eboe consists of slaves and palm oil. The value of the former varies, according to the demand on the coast; but the average value of a lad of sixteen may be taken at 60s., and that of a woman at something more.

Palm oil is produced in immense quantities about Eboe, and is collected in small gourds, each capable of containing from two to four gallons, from which it is emptied into trade puncheons. Some of these, belonging to vessels in the Bonny, were seen in canoes at Eboe; but generally the gourds are taken in large canoes to a market place on the Bonny branch of the Quorra; which branch being dry in the dry season, the Eboe oil then finds its way through the *Brass Creek* eastward to the Bonny.

Abundant as palm oil is at present at Eboe, it might be easily obtained, according to Mr. Laird, in much greater quantities. He calculated that not above a twentieth of the natural produce is collected. But so long as the slave trade exists, it is in vain to look for the development of the industry and commerce of these countries.

At a little distance above Eboe, large branches issue from the river to Benin and

---

* Two steamers were constructed for the expedition; one, named the *Quorra*, was 132 feet in length; the other, only 70 feet long, was entirely composed of wrought iron, and called the *Alburka*, or *Blessing:* these were accompanied by the *Columbine*, a fine brig of 200 tons, and left the port of Liverpool on the 19th of July, 1832. The crew were all picked men, from 25 to 35 years of age; which, in a few months after, were reduced to four only! We are happy in saying that the life of Captain Wm. Allen, R.N., who surveyed the river, has been preserved for usefulness in other parts of the world.

Bonny; and higher up the Quorra is a noble stream, 1½ miles wide. The scenery continually improved, and presented an exhilarating variety to our voyagers, heartily tired of the monotony of the river to the southward. But the fatal taint of disease was on board, and the affliction had already become too serious to admit of alleviation from cheerfulness of scene. Fifteen out of thirty-seven men died within a few days, and nearly all were indisposed; but the sight of the mountains which stretched across the river a little higher up gave hopes of a better climate, and helped to prevent the men from yielding to feelings of despair. They had now reached the town of *Attah*, lat. about 7° 6′ N., lon. 6° 57′ E., which is seated on a hill, overhanging the river in some places with cliffs 150 feet in height. Of this place, Mr. Laird observes:—

> It is healthy, and the only place we have yet seen in the river where a European could possibly exist for any length of time. It has many natural advantages, and on some future day will be a place of great importance. Situated as it is, above the alluvial soil, and at the entrance to the valley of the Quorra, it commands at present the whole trade of the interior; which trade, although trifling at present, it requires no prophet to foresee will at some time hereafter be immense.

Above Attah, otherwise Iddoh, the river forces its way through the chain of mountains. These mountains have all flat summits, of equal height, apparently from 2,500 to 3,000 feet above the river. At the entrance to this beautiful part of the river is the town of *Bocqua*, where a fair is held on a sandbank every ten days, to which some thousands of people resort, many of them coming distances of 200 or 300 miles. This fair is of three days' duration; it is attended by Eboe and Attah, and even Bonny traders from the South, as well as by those from many towns of the N.E., North, and N.W. Those from the upper country bring cloths of native manufacture, beads, ivory, rice, straw hats, and slaves, all of which they sell for cowries, and buy European goods, chiefly Portuguese and Spanish. About twenty-five large canoes passed every ten days on their way to this market, each containing from 40 to 60 people. The trade is carried on by money, not by barter; cowries are the circulating medium, and their sterling value, on an average, may be taken at 1s. per thousand.

The plan of this work will not admit a further detail; nor is it requisite, while the volumes of Messrs. Laird and Oldfield are to be obtained; but we may add, that "the general character of the people of the upper country is much superior to that of the inhabitants of the swampy country between them and the coast. They are shrewd, intelligent, and quick in their perception, milder in their dispositions, and more peaceable in their habits. The security of life and property is evidently greater among them, though it is still sufficiently precarious to prevent the inhabitants from living in insulated situations; nor will any of them venture upon the river after sunset in small canoes. Agriculture is extensively followed, and Indian and other grain are raised with little labour and less skill on the part of the cultivators. Tobacco is grown sparingly, and when dried and made up for sale costs 100 cowries, or 1d. per pound.

"The river abounds in fish to a degree that is almost inconceivable, and the inhabitants of the banks are expert and persevering fishermen. They make vast nets of grass, which they use as seines with great dexterity. They are very careful of their nets after using them, and stretch them on poles to be dried by the sun, exactly as our fishermen do. The fish are split and gutted; they are then dried by the smoke of a wood fire, and form, with farinaceous food, the principal means of subsistence. Fruits are not plentiful on the banks of the river; plantains, bananas, limes, tamarinds, a species of plum, and pine-apples, constitute the whole. The latter are exceedingly scarce, and the former by no means abundant.

"The intercourse and trade between the towns on the banks is very great, the whole population being eminently of a commercial character; men, women, and children carrying on trade. The traffic in slaves, cloth, and ivory is confined to the men; everything else being left to the other sex, who, to say the truth, are far the most difficult to deal with."

The confluence of the two great rivers, the *Quorra*, or *Kavara*, or *Kowara*, and the *Tchadda*, or *Shary*, is in lat. 7° 47′ N., lon. 7° 6′ E., as shown in the late maps. The country above, which is beautiful in appearance, is very thickly peopled. The highest point reached by the *Alburka* was *Rabba*,* below lat. 9° 14′ N., lon. 5° 23′ E., a town containing 40,000 inhabitants, situate in the centre of a populous country, and visited by Arabs from Tripoli, by merchants from Timbuctoo, from Bornou, Howssa, and those from the countries down the river, who trade with the European settlements on the coast.

---

* Subsequently (in September, 1840), Mr. Becroft, in the *Ethiope* steamer, ascended to within two hours of *Lever*, in lat. 0° 43′ N., when the current was found to be too powerful to make head against.

The discovery of the outlet of the Niger by Lander, gave an impetus to enterprise in that direction, and the above expedition was one of the results of that discovery.

The *Ethiope* steamboat was afterwards fitted out by Mr. Jamieson, and despatched under the command of Mr. Becroft, who successfully navigated the river, as before mentioned.

The British government deeming it advisable that the African trade in this quarter should be placed on a firm basis, and also prove a means of ameliorating the condition of the native population, an expedition was fitted out, consisting of three steam-vessels,—the *Albert*, *Wilberforce*, and *Soudan*,—fine ships, built expressly for the purpose. The expedition was put under the command of Captain H. D. Trotter, in the *Albert;* Commander William Allen, the surveyor of the river, in the *Wilberforce;* and Commander Bird Allen, in the *Soudan*. The vessels left England in April, 1841, and the disastrous results of their voyage are still fresh in the memory of our readers. They found the lower part of the river under the authority of King Boy of Brass Town, which extended as far as Eboe, to which point the vessels reached without troubles. But here they began, disease attacked the crews, and they struggled on to Iddah, by the 10th September, when the *Soudan* returned with the sick. The *Wilberforce* soon followed, and the *Albert* alone ascended some 36 miles above the confluence of the Tchadda. They established the model farm, but beyond this little could be done, and the sad remnant of the expedition was rescued by the exertions of the excellent Captain Becroft. Such was the result of this fine expedition. In 1842, Lieutenant Webb ascended the Quorra to examine the model farm, which he evacuated, and thus concluded all that had been accomplished. The dreadful mortality of the crews, and the appalling details of their proceedings, will demonstrate that but little can be expected from personal enterprise of Europeans on the Niger.

It is high water on the bar of the Niger at $4^h\ 8'$; the rise is 6 feet. The mark for crossing the bar, in 13 feet water, is the mark tree, a large one, on the East bank within the entrance, in one with Palm Point, the S.E. entrance point bearing N.N.E. ¾ E. Variation, 20° W. 1846.

VI.—THE BIGHT OF BIAFRA, FROM THE RIVER NUN OR QUORRA, TO CAPE LOPEZ, INCLUDING THE ISLANDS OF FERNANDO PO, PRINCES, ST. THOMAS, AND ANNO BOM.

The Navigation[*] *of the* Bight of Biafra[†] will, at all times, be found very tedious, owing to adverse winds and currents, and light eddies of wind and calms, caused by the great height of the islands lying in the direction of the winds which usually prevail. The East coast of the Bight is, in one respect, rather deceitful. Near the sea the coast is of no great height, but has high hills or mountains at a distance inland; and these hills in hazy weather are liable to be taken for the sea coast itself, and thus the stranger may probably find himself aground, when he thinks he is 12 or 15 miles, or perhaps more, from the land.

I am sorry I cannot give any advice as to the smallest depth of water into which a vessel on this coast may stand with safety. My own practice is (in the night) not to go into less than 10 fathoms, between Bimbia and Point Suellaba; thence to the River Borea not less than 12 fathoms; thence to the Bight of Pannavia, 18 fathoms; and thence, nearly to Cape St. John, not less than 26 or 28 fathoms. Near Cape St. John, caution is required, as the cape itself is bold, and the current often runs with considerable force directly upon it. From Corisco to the River Gabon, a vessel may tack in the night in 18 or 20 fathoms.

In the vicinity of the land the starboard tack requires a very careful look out, owing to the general easterly tendency of the currents.

---

[*] The following remarks on the navigation and directions for the Bight of Biafra, are by *Captain Midgley*, 1841.

[†] *The* term Biafra or Biaffra appears to be a corruption of *Maffras*, as the Portuguese discoverer *named* one of the Rivers of the Bight *Rio de Maffras.*—Sir J. J. Lopes de Lima, "*Ensaió*," &c., livro II., part I., p. viii.

After passing considerably to the southward of Rolas Island, I have generally found it difficult to keep to the southward of the Equator, in all seasons, owing to prevalent S.W. winds and northerly currents; and I have never found any easting in the wind until after I had passed the meridian of 4° West, and generally not until the vessel had attained the longitude of 5° or 6° West between the Equator and 2° to 2½° of South latitude.

Between the second degree of North latitude and the African shore, the currents almost invariably (except in the Harmattan season) run with velocity to the eastward, particularly between April and September; and a vessel bound to the windward coast in these months should *never* go to the northward of the above parallel, until she has attained the meridian of the place bound to; if a little to the westward of it, all the better; and should then make allowance for an easterly current of full 1½ miles per hour.

Between April and September, it is probable that homeward bound vessels may make a good run, by steering to the northward, when they have reached the meridian of 10° W., and thence shape a course towards St. Jago, guided, of course, by wind, weather, and current; but it is probable, in these months, the wind in this track will hang from S.W. and W.S.W., with squalls and rain.

Notwithstanding a number of fair passages have been made in the above tracks, on mature consideration, I am still inclined to recommend the route to the southward of the Equator, as far as 20° West, as the most preferable, because the most certain; and it is surely better to sail with a fair wind, a favourable current, and fine weather, than to be annoyed with continued squalls and rain—to say nothing of the probability of adverse winds and calms—in a region proverbial for the diversity of weather.

It may be well to state, that these remarks on African navigation are more particularly intended to apply to heavy, deeply laden, and consequently dull sailing vessels; for in the African oil trade, capacity for carrying a very large cargo, at an easy draught of water, is considered to surpass every other quality a vessel may possess. Superiority of sailing is scarcely ever regarded as even of second-rate importance.

The PREVALENT WINDS which blow upon this coast from S.S.W., W.S.W., and West, nearly throughout the year, and during the wet season, with much force, must have great influence on the current; which I have found from actual experiment prevails in 12 fathoms water, with some strength; and from my own experience, when at anchor on the coast, I think this depth of water may be considered as the general southern boundary of the influence of the tides, which, in 8 fathoms water, appear to set in a S.E. and N.W. direction, or nearly so,—the flood running towards the North-west. Off Bonny, in 6 fathoms, at low water, I have several times in the wet season (when the ship was at anchor) found the ebb tide setting South-east, and running more than 3½ miles an hour; when heavy freshes come down the river, in consequence of the interior of the country being overflowed by the heavy rains.

The CURRENT along the coast between Formosa and Bonny runs generally to the eastward, at the rate of 1 to 2 miles, and in the wet season, frequently nearly 2½ miles per hour; but it sometimes, though rarely, runs to the westward with great force. Several vessels from Fernando Po to Bonny (of course unprovided with chronometers) have found themselves off Cape Formosa; and I have known instances of vessels being set still further to the westward. Should a vessel from Cape Badgley, or George's Bay, Fernando Po, and bound to Bonny, or New Calabar, have run 120 miles upon a N.W. by W. course, without seeing the land, or be in more than 15 fathoms water, it will in most cases be prudent to bear up N. by E. or N.N.E., and she will most likely make the land to windward of Bonny.

ANCHORAGE.—A few remarks on the *Anchorage* off this coast may not be altogether irrelevant; and without presuming to advise those already experienced in the trade, the following remarks and suggestions may be of service to the stranger.

Many windlasses have been capsized and broken, and anchors and cables have been lost, owing to vessels very improperly anchoring in shallow water, or too near to the bars of the rivers, for in such situations the sea runs very high in the wet seasons, and it is indispensable to have sail well set upon the vessel previous to tripping the anchor, or heaving in too much cable; and the action of the wind upon the canvass very materially contributes to the violent jerking motion of the vessel, when at anchor in a seaway.

Vessels should never anchor during the wet season in less than 6 fathoms at low water, calculating 7 feet at the full and change, for the rise and fall of tide in that depth of water; and should ride with a large scope of cable, if there is any sea, so as to have as little strain as possible upon the anchor—the elasticity of a large scope of cable will make the vessel ride much easier in a moderate depth of water.

Strangers to the navigation will find that the heavy short sea which sets in upon this coast, between the months of April and October inclusive, combined with the tenacious quality of the ground for holding, will require more than usual precaution, to prevent the loss of anchors and cables, and perhaps of windlass, bitts, and deck bolts; for off Bonny, and indeed all along this coast, the best of ground tackling, and a good and well secured windlass, are pre-eminently necessary, as damages cannot be well repaired in the Oil Rivers.

Every vessel bound to this coast should be provided with a spare set of windlass pawls, previously well fitted in England; as these indispensable articles are frequently broken, and cannot be replaced in Africa.

These remarks may perhaps appear trifling or superfluous, but Bonny Bar has long been notorious for the number of anchors and cables lost in its vicinity; and in the wet seasons, few vessels which have anchors outside, come into Bonny, without more or less damage to their ground tackling.

The following remarks by Captain Boteler, on the coast between the Isles do Los and Sierra Leone, are so precisely applicable to this coast also, that I shall take the liberty of introducing them here, as an excellent warning to the mariner: only premising, that for this coast the months of *April* and *October* should be substituted for those of "December and April." Captain Boteler says (I quote the "Memoir of the North Atlantic Ocean," 8th Edition, p. 101), "The surf on this coast is extremely heavy; the rollers sometimes curling in 5 fathoms, and breaking tremendously in 3, or even in 4. They may be, in general, expected between December and April, and chiefly about the times of new moon; and therefore, during this interval, vessels should avoid anchoring in shallow water in unsheltered places, especially in the vicinity of a large river, as the opposite tide tends much to increase the danger."

I do not mean to assert that the above is at *all times* applicable to the coast about Bonny; but it is occasionally so, in its fullest extent, about the full and change of the moon, in the wet season, or between April and October.

I have *several times* lost anchors and part of cables by these rollers, when lying in 6 fathoms water, outside of Bonny Bar; and upon two occasions, in strong S.W. gales, with a very heavy sea and flood tide, was obliged to run for the River, when the breakers were running directly across the Bar, and the channel could not possibly be distinguished, except by the marks on the land: very fortunately, the brig happened to be light; but these circumstances have forcibly impressed upon my mind the danger of anchoring too near the Bar.

DIRECTIONS.—In beating up from Fernando Po to Bonny, with a dull sailing vessel, between the months of March and November, it is generally advisable to work to windward along the western shore of the island, as far as "George's Bay," or even to "Cape Badgley;" for the current almost invariably runs much stronger to leeward along the North shore, and in its vicinity (which is one continued bank of soundings), than it does further to the southward.

On reaching off from the vicinity of George's Bay, with winds from the S.W. quarter, vessels generally make the land about Andoney River, after running upon a N.W. by W. course. On making the northern land, if it lays E. by S. and W. by N., *and no river is seen*, still ply to windward. Should the land trend to the northward, the vessel will be to the westward of the land of Formosa.

If any river is seen with a narrow entrance, or even 2 or 3 miles wide, it cannot be Bonny, the entrance of which is 7 miles in width, from Foché Point to Rough Corner.

At 10 miles off the entrance of Bonny River, the ground is pretty hard, and the depth of water about 6 fathoms; but at the same distance off the mouths of any of the other rivers, the ground is soft, in many places pure mud, or mud and ooze, and the depth of water at 10 miles from the land will be about 10 fathoms. The shoalness of the water and distance from the land, together with the bottom being harder than any other place in the vicinity, is alone sufficient to indicate the proximity of the entrance to the River Bonny.

If, on making the land or working to windward, a river should be seen open, go to the mast-head, and diligently examine the land to the *westward*: if there is any appearance of any other river within the distance of 9 or 10 miles, and if the *western* point of such second river can be made out or seen, *and at the same time* the vessel is in 10 fathoms water, with muddy bottom, at 10 miles from the land, you may rely upon being to the westward of Bonny; for in 10 fathoms water off the Andoney, the western point of Bonny River cannot be seen from the deck, and only very indistinctly from the mast-head in perfectly clear weather; and even then it will look like detached trees growing out of the water, unless the refraction, as is often the case, be very great. In 6 or 7 fathoms water, off Andoney, Rough Corner appears like a low, level, and tolerably bluff point; and when the River Andoney bears N.N.E., or even N.E., no land can be seen from the deck, to the westward of Rough Corner; but when Andoney River bears N.E., in 6 fathoms water, the breakers on the Baleur Sand may be seen from the foreyard, between half ebb and one-third flood, particularly if there is any wind.

Should *any* of the other rivers between the land of Formosa and the Andoney (except the Andoney itself), be made upon a bearing from N. to N.E., *both* the headlands which form a second river will be distinctly seen from the deck, if the weather be tolerably clear, and the vessel is in 10 fathoms or less water; and when two rivers can be made out from the deck,—one open, and *both* the headlands which form the other seen,—it affords another proof that the ship is to the westward of Bonny.

Should a vessel make Bonny River bearing from N.E. to North, it will be readily known from its superior width at the entrance, the shallow water, and harder bottom than any other part of the coast: the River Sombreiro will also be seen open. (The Bonny and Sombreiro are the only two rivers on this coast which can be seen *well open from the offing* at one view.) The Sombreiro may be readily distinguished from its bluff head on the West side. When fully open it bears N.W.; and at two-thirds of the distance from it, towards Foché Point, there is a remarkable gap or indent in the land. When this gap bears N.N.E., the eastern point of Bonny River cannot be seen from the deck. The breakers on the Baleur is also a sure mark for the Bonny. The Bonny and New Calabar Rivers cannot be seen fairly open at one view, until a vessel is very nearly upon the outer Bar of Bonny River.

Be careful of estimating distances in this neighbourhood from the eye; the lead is the only unerring guide, and should be constantly used, *except* between the Sombreiro and Andoney: and about three-quarters of a mile may be allowed in practice for every fathom of water; that is, 10 fathoms may be considered as 7½ miles from the land, though (in reality) it is fully 9 or 10 miles off, and so in proportion; but within the limits above named between the Sombreiro and Andoney, the New Calabar, Bonny, and Andoney Flats, and the Baleur Sand, run a very long way to the southward; and the land in this neighbourhood should not be approached within 4 leagues, nor be more than barely seen from the deck, unless bound to Bonny River, and should always be approached with caution, as the tides have more influence in the offing than is generally supposed. At the above distance from Rough Corner the depth will be about 6½ fathoms at half-ebb.

Bear in mind, that along the whole line of coast, from Cape Formosa to Andoney, the water shoals very rapidly in-shore of 5 fathoms, which depth is the general outer boundary of *muddy water*, and not far from the banks which form the bars of the various rivers.

As a general rule, no ship should go into less than 6 fathoms water: if intending to anchor, there is much less sea and better ground all along this coast, in 10 fathoms water, than further in-shore. Inside of 7 fathoms there is a short heavy swell, and sometimes in the wet season high rollers, which cause a vessel to ride very uneasy. By anchoring in this depth of water, a vessel will have a good drift before she can go into danger, should any accident happen to her anchors or cables.

All along this coast, and especially in the vicinity of Bonny, constant and careful attention to the lead will be found indispensable. The lead lines should be constantly and carefully examined, or the ship may be placed in a dangerous predicament. Neglecting this has been the cause of more than one vessel striking upon the Bar of Bonny.*

---

* It would be a desideratum if some soft and pliant substance could be invented for hand-lead lines, which would not be liable to expand and contract from the action of the water; I have frequently had to correct the marks upon lead lines, after an hour's use, as well as when

If bound to Bonny, it may not be prudent in the wet season to run to leeward of the Fourth River after sunset, or the strength of the current may set the vessel to leeward.

DESCRIPTION OF THE COAST.

RIO NUN TO NEW CALABAR RIVER.—The *Rio Nun*, more properly the *Quorra*, is the first of six rivers which intersect the coast between the land of Formosa and New Calabar River—an extent of 20 leagues. It was first called *Rio Nun* by the Portuguese, who gave the name of *Cape Nun* to the West point, and *Cape Filana* to the East. Off the river the water is shoal and muddy, out to the depth of 7 fathoms, which is 3 leagues from the entrance. This is the only one of the Six Rivers that is accessible; but even here is a Bar of 2 fathoms, on which the sea breaks with great violence. The whole of these rivers are outlets of the *Niger*, or *Quorra*, and form the delta of that river.

The RIO BENTO, or *St. John*, the Second River, is 11 miles to the eastward of the Rio Nun. It opens, when bearing N.E., with a high bluff on each side, the eastern one being remarkable by several round spreading trees. When this river bears N. by W. there is the appearance of an island, with several trees on it.

Captain W. Tucker gives the following directions for the St. John:*—In going into this river in a boat, I would bring the West point of the river to bear N.N.E., per compass, about 1½ miles off-shore; then steer N.E. by compass, or N.E. by E., or bring the East point of the river to bear N.E. by E., and continue so until you open the river clear; when I would steer the direct course of the River, about North by compass, making due allowance for the tide, which on or near the Bar, with the ebb, sets out S.S.E.; the flood in the opposite direction varying slightly in its bearing as the force of the tide alters.

Mr. Roberts adds:—When going in there is generally so much swell, it is probable the compass will vibrate too much. In that case pull in, keeping the East point of the river a little open on the port bow, until you get sufficiently near to see the river quite open; then steer in the direction of the river, attending to the set of the tide, whether ebb or flood. It is advisable that boats should go in at last of flood, at high water, or first of ebb, but at no other time during the spring tides. During neaps, vessels cannot be brought out, except at the top of high water, and it is seldom attempted. In the entrance of the *Nun* there are two bars, to cross which the same precaution must be taken as on entering *St. John's*, or *Brass*.

According to *Dr. Daniell*, the Rio St. Bento, or St. John's River, is, from its insignificance, but rarely entered. By some it has been stated to have a greater depth of water, and to afford a more direct and easy route to the town of Brass than by the devious creeks of the former river. *Brass Town*, the seat of government of those regions, is located upon a flat and denuded patch of ground within the recesses of the forest swamps, and barely elevated above the water of the creek that flows past it. To Europeans its *locale* is almost unknown. It has a population of 3,000, who are mainly dependent on the Ebo plantations for the means of subsistence. From this stream to that of the New Callebar, a distance of 50 miles, the land is merely a low, desolate, and marshy jungle, heavily timbered with mangrove, and bounded on the verge of the sea by a beach of sand, the continuity of which is interrupted by the apertures of four inferior rivers. They have been denominated the Rio St. Nicolas, or Filana River, Sta. Barbara, or Sempta River, Meas, or St. Bartholomew, and the Rio dos Tres Irmaôs, or Sombreiro. As these titles are decidedly of Portuguese nomenclature, it is probable that either Diego Cam, in his voyage along the coast from D'Elmina to the Congo, or Fernando del Po, in his expedition to Benin, conferred such upon them.†

ST. NICÓLAS, or *Filana*, or the Third River, is 11 miles to the eastward of the Rio Bento. The coast rounds between. The river does not open until bearing N.N.W. It

---

they have become dry. Lead lines require frequent examination; and I have found that, if the lines are soaked in a tub of clean salt water for two or three hours, and then corrected previous to using them, the lines are not so liable to shrink.—*T. Midgley.*

* See *Nautical Magazine*, February, 1843, p. 78.

† Sketches of the Medical Topography, &c., pp. 77, 78.

has a tapering bluff on the East side, and low land seems to cross the river within, having some round topped trees on it.

Santa Barbara, *Sempta*, or the Fourth River, is 11 miles E. ½ S. [*E.N.E.* ¾ *E.*] from the Rio St. Nicolas. This river has a wide entrance; it appears with the West point low, and does not open until it bears N.N.E., then the easternmost bluff shows like a dolphin's head with the mouth open.

Rio S. Bartolomeo, *Meas*, or the Fifth River, is 7½ miles to the eastward of Rio Sta. Barbara. About its entrance the land is low; it is large, has two bluff heads, but highest on the East, runs in a direct line to the northward, up the country, and opens when bearing North. The shoal ground from the entrance extends to the distance of 4 miles, without which are 3 and 4 fathoms.

Rio Sombreiro, or *dos Tres Irmaõs*, or the Sixth River, is 10½ miles E.S.E. ½ E. [*East*] from Rio S. Bartolomeo. It opens when bearing N. by W., and makes with a large tapering bluff on the West side.

Mr. Finlaison says, that a vessel drawing 12 or 14 feet of water may proceed into Sombreiro River, it having a channel of one-quarter of a mile; the least water he found was 3 fathoms, in a N.E. by N. direction; the reef in a line bearing S.E.; the West point of the river, N.W. 3 miles; Foché Point, East; this was in mid-channel, between the reefs.

All the Coast between the Six Rivers is thickly covered with mangrove, with a sandy beach, stiff clay and muddy bottom without, in 6 and 7 fathoms. The current is generally strong to the eastward.

NEW CALABAR RIVER.—Foché Point, the western point of New Calabar River, is 8 miles E.S.E. ¼ E. [*East*] from the Rio Sombreiro. Between is a bank of hard sand, extending from shore to the distance of nearly 2 leagues,* and as far to the East as Foché Point, where it is bordered by a line of breakers. The western extremity occasionally breaks very violently, but may be passed in 5 or 6 fathoms. Foché Point is a steep bluff, in lat. 4° 22′ 40″, lon. 7° 0′.

"The Rio Real, or New Calabar River, was designated by the Dutch traders as New Calbary, and by the English as the Calbarine. In the last century it was much frequented by small sloops, or shallops, that extensively traded for yams, manioc, and other farinaceous articles, then imperatively required by the larger slave ships of Bonny and other rivers to leeward. Besides vegetable and other exports, it yielded at periods no inconsiderable number of slaves from the Hackbous or Ebo country. The attention of the inhabitants is now directed to the culture of the palm tree, and the vending of its produce, with which they load annually several ships."—*Dr. Daniell*, "Medical Topography," p. 78.

The estuary of the New Calabar and Bonny Rivers is 8 miles in breadth; the town of Bonny, bearing E. ¾ S. [*E. by N.*], is 8½ miles from Foché Point. The outer point, on the East, is called *Rough Corner*. There is a channel on each side into the respective rivers; but the middle part is occupied by a large bank, extending out to sea, and on several parts of which are only 3 feet of water, with one or two islets, and several spots nearly dry at low water.

The New Calabar pilots say that the old channel leading into that river is completely blocked up, and they now use a narrow swashway which the tide has formed through the western breakers, close to Breaker Island, which has only 12 or 13 feet at high water springs. Five or six years ago, says Captain Midgley, I turned to windward, through the old channel out of New Calabar, in a brig drawing 14½ feet of water; another proof that the tides are making rapid alterations in the vicinity of Bonny.

Rough Corner, on the survey by Captain Vidal, is given as in lat. 4° 23′ 40″ N., lon. 7° 7′ E. High water, on the full and change, at 5^h; rise, 9 feet. Variation, 20° 7′ W. —1826.

Foché Creek, or *Gap*, is 3 miles to the westward of the extremity of Foché Point; on the middle of the coast between are a few houses.

According to Dr. Daniell, "the village of Fouché, or Foko, originally named by the Hollanders Wyndorp (from the abundance of palm wine, or Tumbo, procurable from its natives), consists of a number of scattered houses, indiscriminately erected around the point. It is inhabited by the river pilots and their families, who are mostly engaged in piscatory pursuits, in which they are very expert. The aggregate amount of the people is above 300. A deep and conspicuous indentation of the coast, 3 miles to the westward of the point, is called Fouché (or Foché) Gap. A few native huts may be strewed amid the evergreen brushwood that skirts its limits. Fouché village and point are decidedly the most healthy localities in New Callebar, from their favourable exposure to the daily sea breezes, and exemption from mud banks, with their natural concomitants, musquitoes and sand flies. The soil in the neighbourhood of the houses is a thin layer of sand upon a bed of alluvial deposits. The sandy shore in front of these habitations may be said to continue to the mouth of a narrow creek that obliquely winds behind the town towards the Gap, where it has been supposed to join the ocean. Six or seven miles beyond Fouché Point is *Youngtown*, scarce worth the name applied to it. It possesses about 800 inhabitants, the majority of whom are the slaves of a petty chief. Some tall and graceful cocoanut trees, with an occasional palm and banana, are the only objects that serve to dissipate the pervading monotony of mud and mangroves meeting the eye on all sides. A short distance from the creek is the entrance of another that leads to the Quorra, and through which the Bonny canoes pass when they attend the Ebo markets. The upper projection of the bank at its mouth is called *Juju Point;* abreast of it the merchant vessels commonly anchor. Following a circuitous course for some miles to the N.W., it unites with one that passes by the chief town of New Callebar, 5 miles more to the North. This latter creek, after effecting a junction with that just mentioned, conjointly with it trends towards the Brass country, thus constituting an island, on the right bank of which, in proximity to the river, the metropolis of the kingdom is situated."—"*Medical Topography,*" *&c.*, p. 80.

---

* Omitted in the Admiralty Chart.

Mr. Finlaison directs those bound to the River Bonny, or New Calabar River, when running for Terra Formosa, to keep in the latitude of 4° 10′ N., and no farther to the northward. If in the daytime, you may advance as near as you please in 5 fathoms. On running along shore, at low ebb, thick clay-coloured water will be found at the distance of 6 or 7 miles from shore. With high water it does not appear thus at more than 4 miles off.

If bound to the New Calabar, or Bonny, make Sombreiro, or the Sixth River, and you may be certain where you are, for it does not open until it bears N.N.W.

After leaving Sombreiro River, you will find that the shoal above mentioned will oblige you to haul off a point or two; but, with daylight, you will see Foché Point before you get that length.

From Foché Point upward the coast of New Calabar River trends nearly North; the East point of the entrance is a league above Foché Point, and here the river is 2 miles wide; but lower down, between Foché Point and the middle bank, or Calabar Flat, it is little more than 1 mile. The depths above Foché Point decrease from 7 to 5, 3½, and 4 fathoms. At 3 miles, in middle channel, above the eastern point, are 5 fathoms.

A spit of sand, extending to the S.E. from Foché Point, forms the Bar of this river. Its inner part dries, and without this are from 10 to 15 feet of water. In the channel without the Bar, on the West side, are likewise several shoals. You may enter here, with Foché Point bearing N.E. ¾ N., and then giving these shoals a sufficient berth. The depths in mid-channel are 3 and 3½ fathoms at low water.

BONNY RIVER.—"The *Bonny*, or *Bani*," says Dr. Daniell, "was one of the first rivers which the Dutch, English, and Portuguese were acquainted with in this portion of Africa. From the sixteenth to the present century it was the favourite mart of the slave ships, when the exportation of human beings was a legalized traffic; and the amount of slaves transhipped seldom came to less than 16,000 per annum. Since the extinction of this odious commerce, it ranks as the grand emporium of the palm oil trade, exporting many thousand tons of this lucrative commodity, and employing more vessels than all the rivers of the Bight collectively."—"Medical Topography," pp. 82, 83.

The Bar of the Bonny River extends S. by E. from the great middle ground or flats; and its outer extremity is 7½ miles S.W. from Rough Corner. To the eastward of the Bar, separated by a channel 1 mile in breadth, is a bank of hard sand, named the *Baleur*, which has an extent of 4 miles S.E. and N.W. Beyond this, on the East, are two *shoals, the Middle and Eastern Patches.* The *Eastern Channel* into the river, called the *Portuguese Channel,* is between these banks and the Bonny Flats, which extend from shore; added to which, on the same side, is an outer bank, called the *Portuguese Bank*, lying to the eastward of the Patches.

Jew-jew Point is only a mile within Rough Corner; and at 3 miles higher, on the same side, upon the western bank of a creek, is the town of BONNY.[*] On the opposite bank, North of the latter, is the point and town of *Peter Fortis;* below which, on the same side, is a bank dry at low water.

These rivers have long been noted as marts for the slave trade,[*] and are equally so for palm oil, &c. The common Manchester cloths, it is said, suffice for this place, with guns, powder, iron, neptunes, or brass pans, crockery ware, &c.

The entrance of the Bonny presents a broad expanse of water, consisting of the mouth of the Bonny to the eastward, and the New Calabar to the westward. The former is the more considerable of the two, although they are both fine rivers, and can be entered at any time of tide by vessels drawing from 12 to 18 feet of water. They are likewise deep inside, and the anchorages safe at all seasons of the year. On account of the great commerce carried on in the Bonny, *King Peppel* (who resides at Bonny Town, on the eastern bank of the river, near its mouth) possesses great wealth, and in his vanity assumes various titles, of which "*Conqueror of the Calabar*" is the most remarkable. Notwithstanding his large magazines, full of goods and specie, he always pretends to be poor; probably from the fear that were he known to be rich some power, superior to his own, might be induced to attack him and his possessions for the sake of plunder. These magazines are at some distance from Bonny Town, but their exact situation is kept a secret from strangers.—*Captain Vidal's Narrative, Owen*, Vol. II., pp. 383—5.

Upon the condition of Bonny, another officer of talent (H. B. R.) has written as follows:—

The entrance to the River Bonny is extremely intricate, and I would recommend to all ships to receive a native pilot before they attempt it. These fellows are provided by the king for that purpose, and upon application to his kingship one is instantly sent, without any charge being made, although it is customary, if he performs his duty well, to make him some trifling remuneration; but this is not always the case, as, from ignorance or idleness, accidents frequently happen.

---

[*] When this infernal traffic was active, it was computed that for twenty years not less than 20,000 persons were annually sold here, 16,000 of whom were natives of the country of *Heebo*, or *Eboe*. The remaining part were of the *Allakoo*, or *Brass Pan Country*. Fairs for the purpose were held every five or six weeks, at several villages on the banks of rivers and creeks in the interior; and large canoes, carrying 120 men, were employed in the navigation. The Heebos must inhabit a very populous and extensive country, and it is probable that the towns, at the mouths of the rivers along the coast, including New Calabar and Bonny, were peopled from the Heebo country. Amacree, king of New Calabar, and Peppel, king of Bonny, were both of Heebo descent, as well as many of the principal traders at both places.

These towns were probably first built and occupied for the purpose of obtaining salt, by the evaporation of sea water; because the country, from the sea board to 50 miles in the interior, is a vast morass, heavily timbered, and unfit, without excessive labour, to produce sufficient food for more than a scanty population; and as the trade in slaves increased, these towns, particularly Bonny, grew into importance. The language also spoken at these places varies but little from that spoken by the Heebos, which proves a common origin.

The Heebos, in their persons, are tall and well formed, and they may be distinguished from other Africans by their skin having generally a yellow, bilious cast, although varying, in some instances, to a deep black. Their dispositions are naturally timid and desponding, and their constitutions delicate.

The neptunes, or large brass pans, essential in the trade with this coast, are used, during the dry season, by the creek and surrounding country people, for the purpose of evaporating sea water, to obtain its salt, which is here the medium of exchange, and a great trade is carried on with the interior country.—*Adams.*

Dr. W. F. Daniell, whose ethnographical acquirements make him an authority on these subjects, says that the different tribes inhabiting that maritime expanse of country comprehended between the Rio Formosa, in the Bight of Benin, and the Old Calabar River, have unquestionably derived their origin from one common stock. . . . The great parental source from which most of them have emanated are the Ebo's of the Quorra, which, for the sake of perspicuity, it will be necessary to separate into three distinct classes.

1st. The Ebo's Proper, which include the natives of the Rio Formosa, Warree Island, Rio Escravos, Brass Town, and the Quorra generally.

2nd. The Ebo's of the table land between the Quorra and Cross River, comprising the natives of New Callebar, the Bonny, and a portion of the inhabitants of the River Andony.

3rd. The Ebo's of the country between the Andony and Old Callebar Rivers, which embrace the habitants near the coast, the natives of the several towns of Old Calabar, and of the entrance of Cross River.

The chief produce of this place is palm-oil, which must be very plentiful. This traffic is, however, attended with much danger to the immediate actors; and great difficulty is experienced in obtaining seamen for the ships, as it frequently happens that few of the original crew return from that fatal coast; they sometimes lie for a considerable time before they complete their cargo, and, during this period, the greater part of the ship's company not unfrequently become victims to the pestilential climate.

The method of commencing trade in the River Bonny deserves notice. When a ship arrives, let her object be what it may, ivory, palm oil, or slaves, all have to undergo the same ceremony. Before a single act of barter is allowed, a *dash*, as it is termed, must be made to the king, which, being interpreted, means a handsome present. This takes place with all the pomp imaginable; a few days after the vessels arrival, his kingship is invited on board to a *dêjeuné à la fourchette*, when all the masters of the different ships are mustered to meet him. He then embarks in a large canoe, rowed by about thirty paddles, while he sits with all the pomp and dignity of the *King of Bonny*, on a kind of rude throne or chair rigged up in the afterpart, and dressed in his robes of state. Upon his arrival on board, he is received in due form, and handed to the breakfast table by the captain. Immediately he is seated he falls to and eats, like any other hog, until his powers of receiving, but not his inclination, are exhausted; when this effect is produced, the dash is brought forward and spread out for his inspection. It generally consists of various articles, such as muskets, casks of powder, beads, bushels of salt, and stuffs of various descriptions. If the intended offering meets with his approbation, he gives a grunt to that effect, when the goods are handed into his boat. He then takes a parting glass or two, before embarking his own fair form, from the effects of which he is generally slung in a rope and lowered to the canoe, where,

> "The world forgetting, by the world forgot,"

he is rowed ashore, to wallow in the mire of which nature made him.

Immediately after this ceremony trade is allowed to begin, and the coopers from the palm oil ships may then go on shore and set up their casks, which are put into the trading canoes and taken many miles up the country: they frequently return in the course of a week with two or three puncheons, which they procure for similar articles to those mentioned above. The average import of this oil into the port of Liverpool for some years past has been about 12,000 tons per year, value about £400,000. Three-fourths of this oil are exported from the Bonny and the other outlets of the Niger, and it gives employment to 12,000 or 15,000 tons of shipping per annum. The price of palm oil, duty paid, varies from £33 to £34 per ton (1842).

The country surrounding this town is low and swampy, and at this season of the year (March) particularly unhealthy. The merchant vessels were losing many men daily, although every precaution was taken to prevent disease. They were nearly all covered in, and the men not allowed to go on shore or work in the sun, which is the chief enemy to the constitution in this climate.

The river abounds with sharks of an enormous size; and, from the respect which is paid them by the natives, they are quite domesticated. This, however much it may be admired in some animals, is not at all a pleasing trait in the character of a shark, and the domestic monster of this species is quite as disagreeable in his mode of mastication as his less polished brother of the deep. The inhabitants of the New Calabar worship this sagacious monster, which they call their *jew-jew*, and seem to consider that the nearest way to heaven is through the digestive organs of a ground shark. In consequence of this devotion paid to the shark, it is considered in the New Calabar a great crime to kill him; for they say, "Who kill jew-jew, him go dam—but who jew-jew eat, him go *comărtable;*" an odd idea of comfort, but *chacun à son goût* (each to his taste), as our polite neighbours say. These animals appear so well aware of their prerogative of protection, that they commit the most daring acts, and have been known to leap some feet out of the water to get hold of the men whilst working in the head of the vessel, thinking, no doubt, that they were fit subjects to be *made* "*comfortable*," as they had just undergone the process of ablution. Falling overboard is certain destruction, as they keep a constant watch upon all vessels lying in the harbour. The shark is esteemed a great delicacy at Bonny, and whenever it can be caught is greedily devoured, the fetishe of Bonny being the *Guana.*

The inhabitants hold a kind of festival three or four times a year, which they call the "*Javjav*," or "*Jew-jew.*" It is conducted by taking all their canoes into the middle of the river, when, after numerous ceremonies and absurdities to invoke the patronage and protection of their attentive listeners, they commence throwing them quantities of goats, fowls, yams, &c., until every monster that happens to be in the neighbourhood appears satisfied, when they return to the shore with loud rejoicings. In return for this kindness the Jew-jew protects the first native that he can get hold of, which he prevents any *other* from attacking by eating him himself.*

These people have a great deal of trade and constant intercourse with Europeans, yet we found them in many things as debased as any savages upon the coast; and the various bloody ceremonies which they perform to the present day corroborate this statement.

As well as the shark, another object of their devotion is the *Guana*, which is the fetishe or jew-jew of Bonny; it is a species of lizard, which is one of the most privileged members of society, and allowed to do whatever it pleases with impunity. It is a most filthy and disgusting reptile, which, in this unaccountable country, may be a reason for the attention which is paid it. Being thus sacred, any injury inflicted on it would be followed by cruel punishment.

For a further illustration of this subject, see the *United Service Journal*, 1st Nov., 1831.

Stock of all kinds (and even yams and plantains) is now very difficult to procure in Bonny without paying a most extravagantly exorbitant price for it, and even then it cannot be procured in any quantity; vessels should therefore purchase their fresh stock, corn, &c., to windward. Pigs and poultry can be purchased tolerably cheap in barter at Frisco, Cape Lahou, Quitta, or Popoe. Iron bars, leaf tobacco, common kinds of Manchester cloth, gunpowder, and rum, are sure to be asked for. Knives and axes are also in demand. If the vessel is much pressed for time, it may be better to call at one of the settlements on the Gold Coast, where stock of all descriptions, with the necessary diet, can be *immediately* procured, particularly at Accra.

Bonny River abounds with many kinds of large and excellent fish, which is the only fresh diet which can be procured at anything like a reasonable price: but even fish cannot be always obtained, as this article forms the principal, indeed, universal, diet of the natives. I believe the whole of the fish taken in Bonny are perfectly wholesome food, without a single exception.—*Captain Midgley* (1841).

DIRECTIONS, ETC.†—It is the general practice of the pilots, in going into Bonny enable an observant man to take advantage of the periodical changes, which so frequently occur in the dry season.

---

* The annual sacrifice in the Bonny, of an innocent child, reared for the express purpose of being devoured alive by these monsters, it has been stated, has of late years been abolished; but there is every reason to believe, that human sacrifices are still prevalent; that they are not entirely stopped, the evidence of Dr. Madden will show:—"The following account of one of these horrid practices was given me," says Dr. Madden, "by one of those captains who was himself cognizant of the circumstances he described, which occurred in the year 1840. My informant and the other masters of English vessels then at anchor in the Bonny, when they went ashore were frequently in the habit of seeing a little negro girl, about ten years of age, who had been brought down from the upper country, and placed under the charge of one of the natives at Bonny previously to being sacrificed by the jujumen or priests of that place. The masters of the British vessels frequently saw the child, and were not ignorant of the intended sacrifice of it. The child must be without spot or blemish. If there is the slightest eruption on the skin, or the smallest scratch, the child is held unfit for sacrifice. Consequently, the person placed in charge of the child was extremely careful to preserve it from hurt or injury, and in the present case seemed in the greatest alarm at all times lest any accident should happen to it. The little girl was suffered to go about, to do whatever she liked, and no one dared to punish or to contradict her. On the appointed day she was placed on a stage of planks placed across a canoe, and taken by some of the Bonny people over the Bar of the River. The men in the canoe kept telling her they were going to send her to see her father and mother; and while engaging her attention in this manner, they slipped the stage on which the poor child was sitting into the sea, and, consigning her to the deep, they left her to go down. The people in the canoe then paddled ashore as fast as possible; and at the very time this atrocity was suffered to be committed a tremendous tornado set in, and the *Dalhousie Castle*, a British vessel loading in the river, was totally wrecked on the Bar."—*Parliamentary Report*, 1842, App.

† The following Directions for the Bonny are by *Captain Midgley*, 1842.

FROM BONNY RIVER, the land, which continues low, trends E. by S. [*E.* ¾ *N.*] 5 leagues, to the entrance of *Andony River.** This river is blocked up with a hard sandbank, on which are breakers.

RIVER ANDONY.—"This river was formerly called the San Domingo, or Rio Dony. This stream leads to the short Ebo country, a race inhabiting a range of table land, about 40 miles up the river. It also leads to the countries of the Mocoes and the Quas, in the latter of which the customs and language are almost identical with those of Old Calabar. There are two or three insignificant villages a few miles inland on the margin of the eastern bank."†

From Andony River to the entrance of Old Calabar River, the coast trends E. ¾ S. [*E.* by *N.*] 20 leagues. The whole is very low and covered with trees. It is bordered with sand, and exhibits no particular marks. The western point of Old Calabar River is known by the name of *Tom Shot's Point.*

OLD CALABAR RIVER.—The entrance of the Calabar, or Old Calabar River is between *Tom Shot's Point* on the West, and *Backasey*, or *East Head*, on the opposite side. The distance between is 10 miles. The position of Tom Shot's Point, as given in the survey by Captain Vidal, is lat. 4° 36′ N., lon. 8° 19′ E. A break in the East Head, called *Backasey Gap*, is in lat. 4° 29′ lon. 8° 32′. Variation, in 1826, 20° 3′ W.

"Effeat, or Tom Shot's Town, is a dirty and unimportant village erected within the curve of the beach, and encompassed by mangrove woods, which conceal it from view. Its inhabitants possess extensive fisheries, of which the chief product, a species of *silurus*, is smoked and cured in immense quantities for the remote markets of the interior." *Dr. Daniell*, p. 103.

The following directions are among the last works of the late *Captain Midgley*, of Liverpool, a gentleman who has done so much for the hydrography of the Bights. As they are the result of his personal observations, we believe that they may be *implicitly relied on*:—‡

In approaching Old Calabar River from the *westward*, there are several difficulties which require great caution. The principal of these are the strength of the tide (the flood setting E.N.E., and the ebb in the contrary direction, that is to say, diagonally over the Tom Shot's breakers), shallow water, low land, and very irregular soundings.

The Tom Shot's Breakers extend at least 10 miles in a southerly direction from the land; and at 2 miles from their extreme end there is a bank of only 14 feet, and perhaps less, water, hard sand, upon which the barque *Kingston* struck very heavily in December, 1842. At a short distance to the southward of this bank there is 4 fathoms water, over a mixed bottom of sand and mud, and 3½ fathoms, hard bottom, *quite close* to the South edge of the bank.§ Vessels approaching from the westward will shoal the water quickly

---

* See the particular plan of the River, &c.

† *Dr. Daniell*, "Medical Topography," &c., pp. 101, 102. He continues:—"Few individuals are aware of the fact that inland communication by water may be established between the Rio Andony and the Rio Volta (p. 396) without the necessity of undertaking a sea voyage. The route, per canoe, may be described as follows:—1. From the River Andony to the River Bonny; 2. Thence to the New Callebar; 3. Thence to the Quorra by the creek below the town; 4. From the Quorra or Nun to the Rio Formosa, either by the River Broadway, below Ebo, or by the numerous petty creeks connected with the River Esclavos, all of which communicate more or less with the Benin; 5. From the Formosa or Benin River to the town of Lagos by the Lagos Creek (passing East Lagos River and the Cradoo Lake); 6. Thence by West Lagos River by Badagry to Whydah and Grand Popo; 7. And thence by the creek and salt water lake past the Fort of Quitta to the town of Aooneh, and from thence to the Rio Volta. *Ibid.*, p. 102.

‡ These directions coincide with those given by M. le Comte Bouet-Willaumez in the Annales Maritimes, 1848. The first of these are by M. E. Leps, Lieutenant of *La Vigie*, whose description of his entering caused the mission of Lieutenant Ph. de Kerhallet to make a slight hydrographical survey of it, accompanied by complete sailing directions, as given in the same work, pp. 157—165.

§ The following account of a shoal at the mouth of the river was forwarded to Captain *H. D. Trotter*, R.N., from Captain Becroft, dated October 29th, 1851:—

"*The knoll* with 2 fathoms water upon it is due South, from the South end of Tom Shot's from 10 fathoms, and the bottom will be found getting harder; and this alone will be found quite sufficient to indicate the proximity of the Tom Shot's Breakers. Should a cast of 7 fathoms be obtained (no matter what quality of bottom), a vessel should *immediately* haul to the southward, keeping in no less water than 6 fathoms, until the East Head of the river bears N.E., or N.E. ½ N., and bearing in mind to haul to the southward whenever the bottom becomes hard; and when East Head bears N.E., or more northerly, a vessel of 20 feet water may anchor upon soft bottom in 5½ fathoms, with perfect safety at any time of tide.

There are two swashways through the Tom Shot's Breakers, both of which lay pretty close to the land; but although one of them has a fine open appearance, I fear that neither of them can be recommended as more than boat channels until they are better known, and I merely notice them here as they may be the means of saving human life in cases of vessels driving ashore to the westward of the breakers. Several boats have reported 4 fathoms water in the widest swashway; but the pilot states that he has found only 2 fathoms in various places, and that the ground is hard and very uneven.

Several vessels have got into a very dangerous situation to the westward of the breakers, and were not extricated without much difficulty and detention.

But for vessels bound to Old Calabar, it is in all cases better to make the Island of Fernando Po, and having obtained a departure, approach the river *from the southward*, allowing in the course for 1¼ miles per hour of easterly current in the wet season. On nearing the river, the water will shoal rapidly inside of 9 fathoms (the lead should be carefully attended to inside of 15 fathoms), but with daylight and correct soundings there is no danger, if it is borne in mind, as a constant maxim, NOT to raise *any* of the trees upon the Tom Shot's land more than just to be seen topping upon the horizon in detached places to an eye elevated 18 or 19 feet above the water, until a ship is sailing over the outer bar, or, in other words, until the East Head of the river bears N.E. ½ N., or thereabouts.

A vessel drawing 18 feet water, *when outside the bar*, will be quite close enough to Tom Shot's land when the *extreme* tops of the trees appear like detached umbrellas upon the extreme verge of the horizon, when seen from the poop deck of the ship, or 18 feet above the water in clear weather.

There is no danger whatever in the way of approaching East Head upon a N.E. ½ N. bearing, as any vessel may gradually approach any required depths of water for anchoring, upon an excellent bottom of soft mud, from which the water gradually shoals upon the same bearing to the outer edge of the great mud flat, which forms the outer bar of the river; upon this bar there is said to be 6 feet rise and fall of tide (but I think this is rather over-rated), and the pilot says that it is high water at sunset, on full and change, or about 6^h. In the wet season the ebb runs longer than the flood, but there is at no time less than 16 or 16½ feet water in the fairway over the outer bar, even at low water of ordinary springs; and as the *fairway ship-channel* is all soft mud, a good ship would receive little or no injury even if she should lay upon the ground for a tide, this bar being similar to that of Demerara.

Tom Shot's Point is a low and level elbow land, gradually rounding off to the northward, and has no point or protuberance whatever; except, indeed, the entrance of a narrow creek, at the extreme northern termination of the Tom Shot's Breakers may be called so. On the banks of this creek stands the *town* of Tom Shot's (which I consider as situated upon Tom Shot's Point); and at a mile or two to the northward of Tom Shot's Town there are two enormous trees, standing about three-quarters of a mile or a mile nearly North and South from each other, and which, from their immense height, size, and spreading foliage, form a very conspicuous mark, and when seen from the offing really appear as if standing upon the nearest part of Tom Shot's Point.

The following remarks were made on board the ship *John Campbell*, of Liverpool, myself master, bound to Old Calabar, and drawing 18¾ feet of water, with a pilot on board (Mr. Hogan, the principal pilot of Old Calabar), a native of the country, but a

---

reef, about 2 miles distant. To avoid it in coming from the westward, steer East in 8, 9, or 10 fathoms. If the weather is clear so as to see East Head, get it N.E.; then steer N. by E. from the river of Old Calabar. All the rivers in the Bight want surveying. Knolls and sand banks get up and disappear in two or three years. Breaker Island is larger now, with trees on it."

man of great ability, and sound professional judgment, and as well acquainted with the soundings and set of the tides as any European pilot can be in his own district.

Friday, 12th April, 1844. Civil Time.—At five days before the new moon, and at one hour after high water, made sail from the outer anchorage, in 5 fathoms water, with the East Head of Old Calabar River bearing N.E. ½ N. Wind light and moderate from S.W. by S. to W.S.W.: vessel steering in, towards East Head upon a N.E. ½ N. course, and gradually shoaling the water to 3¾ fathoms, with soft, and sometimes, but very rarely, a sticky, bottom. Upon this course gradually rose the Tom Shot's Breakers on the port bow and beam, and still having 3¾ fathoms water all over the bar at half ebb. Ship steering gradually a little more to the northward, having the line of breakers well in sight from the deck, but making little way in consequence of the decreasing breeze. The approach of a vicious looking squall, coming down the river, induced me to anchor in 4 fathoms water, mud bottom, at 4½ hours ebb, with the western point of the Rio del Rey, then in sight, bearing S. 76° E., and the S.W. extremity of the Tom Shot's Land, N. 52° W. (these bearings taken on the ensuing morning by an Azimuth compass); here the Backasey Gap is very nearly shut up, and the entrance of the Backasey River (*Big Backasey*), appearing quite open, bears N. 45° E., the bottom a soft, dark, olive coloured mud, and excellent for holding, as the ship never started her anchor during a severe land squall of two hours' duration. This anchorage is only about half a mile from the inner edge of the bar, and should only be used in case of necessity, and then, if possible, only at neap tides, except the vessel draws only 16 or 17 feet water. At low water the ensuing day, weighed the anchor with a very light air from the southward, boats towing ahead, and ship steering in North, keeping 1¾ or 2 miles from the breakers on the port beam, carrying 3¾ and 4 fathoms, soft and sticky bottom, until one hour's flood. When Backasey Gap was quite shut up, the vessel was in 25 feet water at one-quarter flood, bottom of a sticky, but rather soft, black mud, of excellent quality for holding an anchor. This is an excellent place for a vessel to anchor and wait for a pilot; or by continuing to steer on North, and constantly sounding, keeping more to the eastward as the bottom becomes hard or sticky, a ship may continue to steer in, until all the land on the West side of the Rio del Rey is shut up behind a small projection or headland which lays a little to the *eastward* of Backasey Gap, at which time the gap itself cannot be seen, and in the fairway channel there is 4 fathoms, on a soft muddy bottom at low water springs. Here a ship will be well inside the bar, and in smooth water. Nearly abreast of this anchorage, and with Big Backasey River a very little shut up to the northward (but still seen well open), lies the *South* end of a long but narrow bank of hard sand,* having a good channel on either side; and this bank extends nearly North and South to its extreme North end, which shelves gradually off in a N.N.W. direction, until it is lost in the muddy bottom which prevails off the mouth of Great Qua River. The extreme North end of this bank lies with Great Qua River completely open, and there are spots upon it of only 15 feet water at low water springs. The pilot says the tide out of Great Qua is gradually wearing this bank away. When the Big Backasey River is seen well open, continue to steer up North, or N. by E., as indicated by the hard or soft bottom (always keeping to the eastward as the ground becomes hard), even perhaps so far as N.N.E. ½ E., and, perhaps, as much to the westward, according to the position of the ship and the strength of the tide, and the ship will be sailing in 4 to 5 fathoms water at half flood.

Parrot Island will be seen before this, on the port bow, thickly studded with tall and remarkably level trees, of a very verdant appearance, so level, that the trees will appear like a well-clipped garden hedge, and apparently growing out of the water: indeed it is scarcely possible to find an uncovered spot upon Parrot Island at high water. When Parrot Island is very distinctly made out from the deck, and the little slow slanting points which jut out from its ends are seen, steer well to the eastward, into 4 fathoms, soft bottom, towards the mouth of Great Qua River, which may be known by a low bushy and verdant prominence on its South side, and which, at a distance, looms like an island. On approaching Great Qua River, the soundings will increase, at half flood, to 5 or 5½ fathoms, and become more sticky, and perhaps hard, and the land to the northward will be seen coming open of the N.E. end of Parrot Island: continue to stand on towards the northern head of Qua River, until Tobacco Head is just seen coming open of the N.E. end of Parrot Island, when the course must be *immediately* altered so as to keep Tobacco Head directly ahead of the ship, or a very little on the port bows, and steering up about N. by W. ½ W., or N.N.W., taking great care to keep Tobacco Head constantly in sight.

---

* My information relative to this bank I received from the pilot (Hogan); and, as several shipmasters denied its existence, Hogan was ridiculed no little about it. He told me, however, he would convince me of the truth of his statement when he piloted me down to sea, and *this he actually* did do, by crossing the bank several times at one hour's ebb, in less than 3½ *fathoms, bottom* of hard sand, the *John* Campbell then drawing 18 feet.—T. **MIDGLEY.**

Now bear in mind that, in steering up as above,* the first land which will be seen, coming open of Parrot Island, is Alligator Island; then a small gap, next to which is Tobacco Head, sloping down to the eastward, and looking like a low and level, yet prominent, headland. When Tobacco Head is seen about 2 or 3 feet open of Parrot Island, steer up towards it upon a course of about N. by W. ½ W. to N.N.W., according to tide; keeping the above mark on, but gradually opening Tobacco Head a little more as the ship approaches Parrot Island. This mark will lead clear between the sands, which extend southward from Parrot Island and the shallow mud banks on the eastern shore; and the soundings must be taken correctly and briskly, and be carefully attended to, hauling a little to the eastern side of the channel, when the ground feels hard. You will thus pass over Qua Flats in not less than 3½ fathoms at half tide; and as the water gets deeper, the ship will be nearer to Parrot Island, and may keep Tobacco Head seen largely open; and, as you find the water deepen, haul up more towards Parrot Island; and, when in 5 fathoms water, steer along Parrot Island, giving it a berth of a quarter to half a mile; run along the eastern shore of Parrot Island at half a mile off, until near its N.E. end, when the ship should haul over towards the N.N.W. end of James' Island, which may be approached to 250 fathoms; and in steering across, the water will again gradually shoal to 3¾ or 3½ fathoms: now keep pretty close to the extreme N.W. end of James' Island, and steer towards Seven Fathoms' Point (a bluff and bold looking land, with trees growing to the water's edge, and bearing about N. ½ E. or N. by E. from the ship), when Parrot Island will be seen, a moderate sail's breadth open of James' Island, and the passage between will look like the entrance of a dock. Keep this latter mark on, and you will pass James' Flats in 16½ feet at low water; but steer small, as the channel is very narrow; and, when the water deepens to 4½ and 5 fathoms, steer on for Seven Fathoms Point, which is very bold-to, and may be approached as near as you please.

Give Seven Fathoms' Point a berth of 60 or 70 fathoms, and, as you stand on along the Bush, you will immediately see the E.N.E. or Duke's Town reach of the river come open: now haul across the river, and when the ships can be seen laying before Duke's Town, or you can see along the southern shore of the river, steer directly across the river for a part of the land laying halfway between a remarkably wide and conspicuous creek, and the first clump of tall trees: steer along the North shore at the distance of 60 or 70 fathoms, as it is bold-to; and when Henshaw's Town comes open of the bushes, steer towards Cobham Town, and take up any convenient berth in 19 to 24 feet at low water, pretty close to the beach in front of Duke's Town.

On passing Seven Fathoms' Point it is customary to salute with three guns; and also to fire guns on passing Henshaw's Town. Immediately on anchoring off Duke's Town, the customary and required salute is seven guns, which is returned by seven guns from the beach.

The tide at Duke's Town flows at 7^h, full and change, and rises about 6 feet. During the rains, the ebb tide on the surface runs longer than the flood; but I have very often observed, and carefully noticed, that the tide rises nearly a foot at springs, before the ebb has done running on the surface; that is, the flood tide, as I think, first runs up underneath, and swells the water. In the wet season the ebb tide runs with great force, bringing down enormous trees, and sometimes small islands of vegetable matter; for which a careful lookout should be kept, as it is dangerous to have such a mass laying across a vessel's bows in a strong tide, to say nothing of the difficulty and labour required to get clear from them; and I have known several instances of vessels having their copper sheathing rubbed off, in consequence of large trunks of trees coming into contact with, and rubbing under, the ship's bends and bottom.

Below Parrot Island, the great strength of the ebb tide setting out of the various creeks and inlets will be found to require much precaution, particularly between Great Qua River and Tom Shot's Breakers, for here the freshes run with so much force (setting

---

* If Tobacco Head be again shut up behind Parrot Island, the vessel will be in danger from the Parrot Island Hook and sandbanks. The vessel must be steered very carefully here to keep in the deep channel.

Those bound to this place may be directed by the high lands to the eastward and N.E. Toward the East, between the parallels of 4° and 4° 24′ N., are the elevated MOUNTAINS OF CAMAROENS, or *Camaroons*,* the highest peak of which, in lat. 4° 13′ N., lon. 9° 12′ E., is 12,357 feet in height above the sea. To the northward of the Camaroens are the RUMBY MOUNTAINS, 9 leagues in extent from N. to S., and the highest peak of which is in lat. 4° 57′ N., lon. 9° 18′ E. An insulated mountain, called the QUA MOUNTAIN, stands at 7 leagues to the N.W. of the Rumby Mountains, the summit of which is in lat. 5° 15′, lon. 8° 51′ E. In clear weather the summit of the Camaroens may be seen at a great distance, and although so near the Equator, frequently capped with snow.

On the Survey, 16*th April*, 1826.—" *Quitted Old Calabar* for *Rio del Rey*, a distance of 12 miles, passing *Backasey Gap*, a creek communicating with the Calabar, but through which there is no passage for vessels of any burthen. This was examined by Mr. Rogler, who had the command of two boats for the purpose. Upon entering, he landed at *Fish-town*, a village from which all the inhabitants fled with the utmost precipitation, leaving everything they possessed, even to their arms. The huts resemble those in general use along the coast; but one custom peculiar to this people is in the disposal of their dead, whose bodies, instead of being interred, were placed under an open shed, on a slightly elevated platform, with a bowl of rice or other grain near the head.

" *The Rio del Rey* is generally represented in the charts as of considerable magnitude, which is, in fact, the impression it naturally conveys on being approached; but that which is taken for the River is in reality but an open shallow bay, with several creeks branching from it, and one larger than the rest, 4½ miles wide at its entrance, but rapidly decreasing into a narrow channel. The Bay is formed on the eastern side by the lofty Camaroen Mountains. The shores are thickly peopled; the inhabitants appear to live principally upon fish; as we saw from 40 to 50 canoes every morning depositing the produce of their nightly labours on the beach. The villages are large, and, unlike those to the southward, are built on the skirts of the Bay, and exposed to view from the water. This feeling of security is produced by vessels seldom seeking slaves in the River; but still these people are a timid race, and we had great difficulty in holding any intercourse with them. They would frequently come off in their canoes full of men, and a chief seated in each; but, when near the vessel, they would suddenly turn round and paddle to the land in the greatest consternation."—*Owen*, Vol. ii., p. 361.

With the Peak of Camaroens S.E. ¾ E. [*E.S.E.* ½ *E.*], that of the Rumby Mountains E.N.E. [*N.E.* ¼ *E.*], and that of Qua Mountain, N.E. by N. [*N. by E.* ¼ *E.*], you will be without the Bar of the Rio del Rey, at 2½ leagues to the S.S.W. of Backasey Point. The channel thence rounds to the N.E. into the River, and the coast eastward forms a bay, 4 leagues in breadth, filled by alluvion from several rivers, and over which the water is very shoal; for even in the channel to the River the depths are only 2, 2½, and 3 fathoms, muddy bottom. This river seems to be no longer a place of trade; yet it is said that Rumby, on the East, abounds in an excellent species of ebony, which may be had cheap, as well as provisions of all sorts, hogs, goats, yams, &c., provided you are well guarded against the natives.

"This River (Rio del Rey)," says the Old English Pilot, " affords abundance of large elephants' teeth, which they commonly barter for copper bars, counterfeit coral, beads, knives, &c.

" The country, far and near, is all low and marshy ground, affording little or no fresh water.

" Here a European must look for himself; for the inhabitants are so subtilly mischievous, that you will be betrayed before you are aware; and they are so barbarously cruel, that the parents sell their children, the husband his wife, one brother and sister the other; and, in decency and order, are scarcely a degree above the beasts."

This description was written in the seventeenth century, and we do not find that the inhabitants have improved since that time.

CAMAROENS MOUNTAIN.—The following description of this peak is by Captain W. Allen, R.N.:—

The native name for the highest part of the Camaroens Mountain is Mongo ma Lobah;

---

* The name of Camaroons is derived from the Portuguese Camaroens, or shrimps, of which there is great abundance in all the creeks and rivers in the Bight.

but at the back, or inland, it is called Mokoli ma Pako. The isolated peak near the Bay of Amboises, about 5,000 feet high, is Mongo m'Etindeh. Although at a distance this noble mountain appears to rise by a continuous slope from the sea, on a closer view it is found to consist of a succession of hills, with intervening valleys of the richest soil, covered to within a third of the summit by beautiful forest trees, which are also seen fringing the ravines still nearer the summit. The remainder is clothed with grass, which becomes more scanty, as the colour, which approaches the reddish brown of volcanic ashes near the cone, sufficiently indicates. The volcanic origin of the whole of this district is strongly marked by the scoriæ and numerous streams of lava which have reached the sea. From the present condition of its surface, it must have been for ages in a condition of repose; though there is reason to think it sometimes betrays its latent fires. Mr. Lilley, who resides at the Camaroens, says that he has seen flame near the summit. This might have been accounted for by the practice of the natives, who set fire to the grass in the dry season, for the purpose of catching wild animals, which they call "bush meat;" but several of the principal natives of Bimbia declare that, about the year 1838, "fire came out of the ground:" they said, "God made it," in contradistinction from that caused by the burning of the grass. "They all saw it; and at Mongo they felt the earth shake like a steam-boat. The people there feared it would kill them all."

To judge by the grey curling smoke issuing from many parts of the woods, for a great distance up the mountain, it must have a large population. Along the sea shore there are many villages; and though the natives were described by Grozilhier, in 1699, as "the worst blacks of all Guinea," Captain Allen found them very civil. In the former period they had a little trade in slaves, chiefly with the Dutch. They now have intercourse only with the Bimbia people, who they supply in a great measure with plantains.

The base of the mountain to the eastward of Mongo m'Etindeh is called Bamboko; that part to the southward, Bakwileh; and behind Bimbia, at the eastern part of the mountain, it is called Batongo.

In clear weather, says Captain Owen, the stupendous highland scenery of the *Camaroen Mountains* gradually became unfolded to our view. The base of these mountains occupies a space of nearly 20 miles in diameter, the highest peak being 13,760 feet above the level of the sea, covered with verdure and trees of luxuriant growth nearly to the summit; but one bare brown ridge, running from the eastern side toward the sea, at a short distance appears like lava. The Peak of Camaroens stands so boldly above the surrounding pinnacles that the descent seems unbroken, giving to the whole the appearance of one vast mountain rising from a single base. The more distant Rumby Range, on the contrary, was seen towering in rude and rugged masses, like the tombstones of a past earthquake; their greatest height must also be considerable, as we perceived them when more than 60 miles distant. The most lofty of these ranges is 44 miles N.E. of the Peak of Camaroens, the intervening space being a plain, with several conical hills rising abruptly from its surface; giving to the scene a novel and extraordinary appearance. *Qua Mountain*, which is situated 64 miles N.W. of Camaroens, is also a stupendous elevation, and was discerned by us from a distance of nearly 80 miles. Most of these are volcanoes, as well as the whole of Fernando Po, which is immediately opposite to this part of the main. The sea boundary of the Camaroens presents some singular evidences in support of this; amongst them may be mentioned two rocky cliffs at some distance apart, but which are connected by means of a gallery perforated at equal distances by a line of holes answering the purpose of windows, resembling the work of an expert engineer in the excavation of a fort.

In advancing from Backasey Point to the S.E., or toward the high land of Camaroens, you will pass over a slimy, muddy ground, and have 3½, 4, 5, and 6 fathoms, at 4 miles from shore. But on advancing toward the S.W. point, or lat. 4° 6′, the water deepens, and the coast becomes bold; and here, at 2 miles from shore, are 10, 12, 14, and 16 fathoms. From the point the coast continues bold for 20 miles, to the point and village of *Bimbia;* * and at a short distance from it the depths are 10 and 12 fathoms.

All the country from the estuary of the *Rio del Rey* to the *River Bimbia*, which is 16 leagues to the S.E., is thickly covered with trees; and southward, from the S.W. point of Camaroens, it is generally bold-to. At 2½ miles to the southward, on the same meridian, is an insulated sunken rock, between which and the coast are 3½ and 4 fathoms. This rock requires caution, especially in those bound to *Camaroens River*, the mouth of which is 4 leagues more to the eastward, and the intermediate soundings, 3, 3½, 4, 5, and 6 fathoms, the latter depth being in the mouth of the river.

---

* By the natives called Esoubou.

BAY OF AMBOISES.—This bay is at the southern base of the Camaroons Mountain, opposite the N.E. point of Fernando Po, and just to the westward of the mouth of the Bimbia River. It was visited by Captain William Allen, R.N., in 1842, and the following is his description:—

There are in the Bay of Amboises three small islands, the sizes and capabilities of which are in inverse ratio to their population. The largest, *Mòndoleh*, only half a mile long, situated at the S.E. part of the bay, is high and rocky, but with a level surface of the richest soil imaginable, of decomposed basalt, and the steep sides are clothed with beautiful wood. There are, at present, only ten men with their wives and families on it, though, if well cultivated, it would afford subsistence for probably five times as many. There are three or four springs of water halfway up the side of the island, which, though scanty, are said to be always flowing. The landing is bad, but might be improved.

The outer island, *Daméh*, or *Ambas*, is smaller, and nearly barren: the rocky slopes and summits only are clothed with a little brushwood and grass. It is, in fact, a narrow ridge of rock, elevated at the outer extremity; but although nature has here provided no means of subsistence, about 300 or 400 people have made it their home. They exchange the abundant produce of the sea with the natives of the main land for plantains and yams. They have also a good stock of goats and pigs, which feed on the precipitous sides of the island. The only place at which boats can land is difficult, on account of the rugged rocks and incessant swell. With very little trouble, however, a good pier might be made. There is only one scanty spring, which, indeed, was dry when I saw it, unless I was misled; the inhabitants are, therefore, obliged to catch rain water, and in the dry season they must get supplies from the main land.

The Island *Bobia*, called also *Pirate Isle*, from the *supposed* predatory disposition of the natives, is more barren even than Daméh. It is a mere wreck of a larger island, as the numerous isolated fragments, perforated by the sea, and lying in its vicinity, bear witness of its having been formerly much more extensive.

It is probable that it once joined the adjacent perpendicular cliff on the main land, as the structure is similar, and between them there is but a narrow and shallow channel. The promontory may even have extended to Daméh, with which it is in a line. The progress of destruction is still going on, as enormous fragments of rock are lying at the North end of the island, which I believe to have fallen since my visit in 1833. Although this is much smaller than the other two islands, it is swarming with people, almost every available spot on its rugged sides being occupied by a hut. It is perpendicular on all sides, and the only access to the summit is by clambering up what appears to be the projection of a basaltic dyke, a fearful path, passable for only one at a time, and which might be defended by a child. The inhabitants probably owe to their impregnable position the bad character they have among their neighbours. They are a ferocious looking, though a shy race; but I never heard of any well authenticated charge of piracy against them. More correctly speaking, their secure position has probably engendered a spirit of independence, and a determination to resist oppression. The chief of Bimbia complained to me that they would not acknowledge his authority, nor comply with demands which I found were not so just as he alleged. These islanders are the principal fishermen of the bay, which in fine weather they cover with their light canoes. This enables them to barter from the main land, with which they are in constant communication, the scanty clothing they require, and supplies of plantains, yams, &c.

They were at first very much alarmed at our appearance, believing that we were come to put in execution the threats of King William of Bimbia; but we soon became on better terms, and I landed several times, and climbed up to their curious village. At the summit of the path the island ridge is not, I think, 10 feet across.

The *anchorage* is excellent in all parts of the bay, as to holding ground and depth; and although it is a lee shore, and there is an incessant swell, I believe it never blows home here so as to endanger ships, and the landing is not so bad as at Ascension. The prevalent wind is S.W., to which the bay is quite open; and the worst months are, I believe, July and August, but there is shelter behind the Island *Mòndoleh*. Wood, vegetables, and live stock may be had in abundance; the latter at a fourth of the price demanded at *Fernando Po*. Excellent water can also be had near *Kieh*, but only at low tide, as the *water gushes out* at the foot of a rock. By excavating, however, above high water marks, a very convenient watering place might be made. The disadvantage of being on a lee shore is amply compensated by the purity of the sea breeze which blows across the Atlantic. The adjacent main land, too, is nearly devoid of mangroves and swamps; and as the land wind blows over lofty mountains, it is rendered cool and refreshing. Indeed, from the peculiarity of its situation, and from local circumstances, I think that the Bay of Amboises will be found to be the most healthy position on the coast of Africa. Although my visits were during part of the rainy season, we seldom had more than a shower, or a tornado, about once in twenty-four hours. The rest of the day the weather was very beautiful, and we were some days without rain.*

The RIVER BIMBIA was formerly called the *Rio Pequeño*, or *Little Camaroens River*. It may be easily known by an islet without the entrance, on the western side, which is about a mile in length from North to South, and lies at half a mile from the nearest shore. There is anchorage on its N.W. side, in 16 feet of water, opposite a village on the main. The watering place is on the West side of a small cove, at little more than a mile to the N.E. of the anchorage.

At Bimbia there are numerous villages built on a beautiful amphitheatre of rocky ground: the inlet is sheltered by a small island, and would be an excellent anchorage for ships trading in palm oil; but it is very hot, and the land winds blow over the swamps of the estuary. The inhabitants are actively engaged in collecting palm oil. They, as well as the natives of the islands in the bay, are of the Dualla nation; while those of the the base of the mountain are of a different race, and are called by their more civilized neighbours "bushmen."

The bar of the River Bimbia, which is 2 miles broad, extends to the S.E. of the islet, and has, on its shoalest part, 13 or 14 feet of water. The water within deepens to 4 and 7 fathoms. From Bimbia, the high land of Camaroens, or Camaroons, appears as beneath when the summit is 6 leagues distant.

Gibraltar Rock.

After leaving the Camaroens, the *Barracouta* proceeded round to the Bimbia, where she was visited by two canoes, one of which was capable of holding above 50 people, but had not then more than 33, who presented a singular appearance from the swiftness with which they plied their paddles, and the exact time they kept, resembling more a piece of mechanism than the united efforts of man. These canoes should never be allowed to approach a merchant vessel when not well prepared for an attack, as two instances of their successful treachery are on record, in one of which they plundered and destroyed an English sloop, together with her crew; and in another, where they contented themselves by taking everything that was valuable, and ill-treating the men. They also attempted to cut out an English brig; but the master, Mr. Town, being aware of their intention, quickly obliged them to retreat, with the loss of four killed.

The chiefs, or, as they term themselves, "gentlemen," who visited the *Barracouta* in their canoes, were distinguishable at some distance by the elevated chair on which they sat, with an umbrella borne over their heads. They had mistaken the sloop for a merchant vessel, and were much chagrined when they found themselves in error.

From the River Bimbia to the extremity of Cape Camaroens the coast forms a convex sweep of 11 miles. It is all low, and covered with trees. *Point Suellaba*, the South point of the entrance of Camaroens River, is of the same description. The bearing and distance of the two points from each other are S. by E. ¾ E. and N. by W. ¾ W. [*S.E. ½ S.* and *N.W. ½ N.*], 7 miles; but shoal grounds extend from the South halfway over the entrance, and the channel in is toward the northern shore.

CAMAROENS RIVER.—The fine Estuary of the Camaroons, properly Camaroens, is the common receptacle of several streams. It owes its name to the Portuguese, who called the extreme point Cape Camaroens, from the vast quantities of small shrimps (*camarað*) found there. This name has been extended to the principal river which falls into it; but the natives, as is usually the case, give it the name of the countries through which it flows. Thus, at Bell's Town it is called *Màdiba ma Dualla.* Higher up it is *Màdiba ma Wuri,* &c. Although it is a beautiful river, it is not to be compared with the Niger. Its average breadth above the mangroves is about 400 yards, as far as Captain Allen reached. In the dry season this portion of the river varies in depth from 2 to 20 feet, though they had rarely more than 8 feet; but when flooded, there would be water enough for vessels of any draught. From the accounts, however. of several intelligent natives, the navigation is obstructed by rocks at Banem, about 50 miles from the furthest point which was reached, or 90 miles from the sea; but beyond these rocks the River goes on for many days, according to the pilot, though he could give no further account of it.

---

* Journal of the Royal Geographical Society, vol. xiii., p. 18.

"It has been supposed," continues Captain Allen, "that, besides the Camaroens, a large river fell into the estuary, called the Malimba; but all persons agreed in telling me that this is but a divergent creek from the Qua Qua River, which comes from the eastward. My pilot, Glasgow, said that this river has more mangroves, but that it is of less magnitude than the Wuri or Dualla (the Camaroens). It is also obstructed by rocks, at about the same distance from the sea. He said the king of all the Qua Qua country resides at a place about 80 miles up the River, called Longassi.

"In the months of May and June, 1842, while waiting with H.M. steam vessels *Wilberforce* and *Soudan* under my command, I took advantage of the delay to examine this part of the coast of Africa. I directed my attention first to the large Estuary of the Camaroens. It had been partly surveyed by Captain Vidal; but some large rivers, which were supposed to discharge their waters into it, particularly the Malimba, remained unexplored.

"By carefully feeling our way with the lead, we arrived safely at the anchorage of the palm oil ships, in one of the rivers which has retained the name of the Camaroens. Here a considerable trade has been carried on for many years with a tribe of the natives who have settled on the lowest *diluvial* part of the left bank of the River, where, by their activity in collecting palm oil, and their intercourse with Europeans, they have become a very large and important community, possessing such a degree of civilization as to render them, in my opinion, highly interesting, and to prepare them for becoming a connecting link between the civilized European and the less advanced natives of the interior.

"These native settlers are, at present, subject to two chiefs, or principal traders, who have assumed a regal style and title. The towns of King Bell and King Aqua, separated only by a little brook, are of great extent inland. The houses are neatly built of bamboo, in wide and regular streets; but the number of plantain and cocoanut trees, and even of large fields of maize interspersed among the houses, render it impossible to form an estimate of the size and population of the towns. I had no time to walk over them; and no credit can be attached to the extravagant estimates of the natives. They are, indeed, an assemblage of villages, or *towns*, as they call them; each named after the head of a family, who selects a spot of ground, and adds to his town in proportion as he increases the number of his wives and slaves. The settlements are situated on a plain, which, being elevated 50 feet above the level of the river, and being of a sandy nature, may be considered as comparatively healthy; an inference corroborated by the appearance of the natives, and the accounts of Mr. Lilley, agent to Messrs. Hamilton and Jackson, who has resided there nearly ten years.

"Notwithstanding the constant intercourse kept up with the tribes of the interior, who bring down palm oil in their canoes, the nature and even the names of the rivers which furnish the means of transport for this valuable article have hitherto remained unknown. I endeavoured to obtain information from the chiefs and most intelligent men, but found their accounts so vague and unsatisfactory, that I was resolved on penetrating as far as I could without risking, what was of paramount importance, the health of my crew."

Accordingly Captain Allen, on May 7th, 1842, proceeded in a galley to explore the River, having found that it would be hazardous to take the *Wilberforce*, on account of the shoal parts of the river. Having advanced to beyond the salt water, the aspect of the banks began to change; the mangrove giving place to the first trees, which, as on the Lower Niger, were low palms with immense arching leaves or branches (called, erroneously, bamboo), from which the natives extract the best palm wine, called Nimba. On leaving the narrow channel, and passing the upper end of the Jibareh Creek, they attained the principal object of their little voyage, the main undivided River, a broad and magnificent stream, resembling some of the reaches of the Niger, below Abòh, and about 400 or 500 yards wide. Soon large huts were seen on the banks, the property of domestic slaves belonging to Bell, or Aqua. There were spacious clearings around the huts, cultivated with bananas, plantains, cocoa, &c., all denoting plenty; and the cleanliness of the houses and the platforms in front far surpassed the miserable hovels of the lean and dirty "gentlemen" on the lower parts of the Niger. As they advanced, villages became numerous, and all had a comfortable appearance, being built in the neat style of the Camaroens Towns. As most of the principal natives were in the habit of trading with the ships, they frequently recognised Mr. Lilley, and the inquiries they made dispelled the idea that they were going among an uncivilized people.

They proceeded to about 40 miles from the sea, when they were deterred from advancing from fear of the effects of the fogs and vapours of the river. "The object I had in view was attained, viz., to ascertain the nature and magnitude of the River, by reaching the main undivided trunk, which is only 8 miles above Bell's Town, and less than 20 from the sea. Indeed, the real left bank of the River comes down as far as that settlement, which is an elevation of 50 feet above the River."*

According to Captain Owen's chart, from the inner extremity of Cape Camaroens, Greenpatch Point, on the East side of Bimbia Creek, bears N.E. by E. ½ E., 4½ miles; Malimba Point, on the North side of Malimba River, E. ½ S., 9½ miles; and the South Point of Malimba River, S.E. by E., 9½ miles. On entering, give the Camaroens land a berth of half a league, and you will sail through the best water into the estuary of the two rivers, with Malimba Point nearly East, until a sandy islet, bearing S.S.W. ¼ W., and Point Suellaba are in one, where you will have 4 and 5 fathoms of water, in the stream of the two rivers, at 2 miles below a long spit of sand extending from Malimba Point, and 1½ leagues below that Point.

From this roadstead the inner point of Camaroens will bear W.N.W. ¾ W. 5 miles; Greenpatch Point, between Bimbia Creek and Mordecai Creek, N. by W. ¾ W.; Gallows Point, on the North side of Camaroens River, N.N.E. ½ E.; and Malimba Point nearly East.

From hence you may proceed up Camaroens River, by bringing the rugged trees on the East of Gallows Point to bear E.N.E., and run directly for them, which will lead over flats of 2¼ fathoms, forming the Bar of the Camaroens River. You run directly for these trees, until over the flats, which you will know by deepening your water to 3¼ and 3½ fathoms, in what is called *Old Hole*.

Enguias Point is 8 miles up the River beyond Gallows Point; and 3 miles below it, on the same side, is *Mungo Creek*. By bringing Enguias Point about two ships' length without the bushes at the water's edge, below Mungo Creek, you clear the middle grounds of the River, and advance within a musket shot of the North shore, at the rugged trees near Gallows Point.

Proceeding upward, about 2 miles above the rugged trees, steer more for mid-channel, keeping the gap up the river about a sail's breadth open; then you may run up to the road off King George's Town, on the South shore, only giving Doctor's Point (3 miles below it) a good berth. Here you may anchor in 5 fathoms. The tide, on the full and change, flows in the road at 6^h; at the cape, at $5^h\ 30'$. The rise is 8 or 9 feet.

Here it may be observed, that a spit or flat of sand extends from every point of the river in the direction of the ebb tide, and more especially on the South side of the entrance, where the spit from Suellaba Point extends 4 miles to the northward: upon this spit is a chain of heavy breakers, called the *Dog's Heads*, which may be seen at a great distance, and require a good berth, as the tide sets over them with rapidity.

Palm oil and ivory are equally abundant in this neighbourhood, especially the latter, which is large, and of very superior quality. To three large towns, *Mungo*, *Batimba*, and *Belimba*, the ivory of Camaroens is brought from the interior; and these, therefore, are the principal depôts whence the river is supplied. The system of barter is the bar trade, every article being valued at so many iron bars. Salt is an essential and important article of commerce, being in great demand.—*For other particulars, see Lieutenant Bold's Volume*, p. 84.

---

* **"Excursion up the River Camaroons and to the Bay of Amboises, by Captain W. Allen, R.N." Journal of the Royal Geographical Society, 1843, p. 1.**

We subjoin a communication (June, 1838) from Captain Midgley, relative to this river:—

The directions hitherto given for the Camaroens River not being much calculated to assist a stranger, I send you the following, which were *partly* written by Captain John Lilley, of this town (Liverpool), with some corrections of my own. Captain Lilley's long experience and knowledge of the Camaroens River (having resided there some years) will, I think, entitle his directions to much confidence. I distinguish Captain Lilley's directions by inverted commas.

"From a berth of 1 league off the N.E. end of Fernando Po, if there be no current, steer E.S.E. ½ E. by compass, keeping Bimbia Point a little on the larboard bow, until the low and level land that extends from it to the S.E. is distinctly seen from the deck. When two-thirds of the distance across, which will be in about 8 or 9 fathoms of water, keep the lead going, and do not approach this low land nearer than in 5¼ fathoms" (to avoid the Bimbia Flats), " until the S.E. extremity of it, which is the *False Cape Camaroens*, bears N.E. by E. by compass, when a vessel must steer directly for it. The False Cape is 11 or 12 miles to the S.E. from Bimbia, and is the first part of the land of the river that should appear to a vessel coming from the westward. The False Cape may be seen about 4 leagues off in clear weather; and in steering toward it, upon a N.E. by E. bearing, there should never be less than 4½ and 5 fathoms of water, over a soft bottom, until nearly approaching the cape. When the vessel is about half a league from False Cape, steer along the land into the mouth of the river, in about 5 fathoms of water; taking care not to go into less than 4½, nor to more than 8 fathoms, until Cape Camaroens, which forms the western point of Bimbia Creek, is abeam of the vessel (bearing about N. by W.); whence steer toward Malimba Point, on about an E. by S. course, until *Greenpatch Point* (on the East side of Bimbia Creek) bears North, when you may safely anchor upon a muddy bottom, in 5 fathoms water, and send up a boat to Camaroens Town for a pilot.

"*Greenpatch* is a round point, sloping gradually toward the water's edge at high water, and has low, smooth, verdant bushes upon it, from which the point derives its name.

"*On sailing from the False Cape to the Greenpatch*, should the lead give less than 4½ fathoms, haul well to the southward immediately, as there are several hard and shallow banks on the North side, which must be carefully avoided. (The North end of Fernando Po, kept well open of the False Cape, may be a good mark for avoiding them, but this mark I merely mention as an object for future investigation.) By keeping in the above depth of water, that is, in from 5 to 8 fathoms, a vessel will be out of all danger from the *Dog's Head Reefs*, which extend nearly two-thirds of the distance across the mouth of the river, from Point Suellaba, and are always seen and heard at a great distance. The Dog's Heads are steep, having 14 fathoms very close to, and 10 fathoms within, at the distance of half a mile from them. On standing toward them, from the northward, the depth increases very rapidly from 9 fathoms; and they are extremely dangerous, as the ebb tide out of the Camaroens, Malimba, and Qua Qua Rivers, and also out of Bimbia and Mordecai Creeks, which are branches of Bimbia River, combine together, and the stream rushes directly over them, with great velocity, at spring tides.

"As the bottom of the channel into the Camaroens River is all soft mud, should hard bottom be found, the vessel will be out of the fairway; and the depths from sea up to Greenpatch should never be less than 4½ nor more than 8 fathoms, to insure the safety of the vessel from the Dog's Heads; and there should not be more than 6 fathoms until the true Cape Camaroens bears N.N.E. or N. by E. The False Cape must not be brought to the northward of N.E. by E. until the vessel is about half a league from it, as before stated; and with light winds frequent bearings should be taken, should the tides of flood or ebb have effect upon the vessel.

"It may not be superflous to remark, that too much attention cannot be paid to the lead and lines when in or near this river, as the water shoalens and deepens in some places very suddenly, particularly between Cape Camaroens and the Dog's Heads, or about S. by W. from that cape.

"In case a vessel is obliged to anchor off Cape Camaroens, she will find much less tide and easier riding in 5 or 6 fathoms than she would in deeper water.

"An instance having occurred of a vessel's boat going up the *Malimba River* (where *there is no trade*) instead of the Camaroens, it may be advisable, in sending from Greenpatch for a pilot, that the boat should keep the North shore aboard until she gets 6 or 7 miles above Mordecai Creek (which is the second creek or bight on the North side of the river, and of which Greenpatch forms the western point); then haul over to the South side of the river; and the vessels will be seen, if there are any in the river, at King Bell's Town, about 3 miles above Doctor's Creek, on the South side of the river, and about 15 or 16 miles above Greenpatch.

"From the anchorage at Greenpatch the Camaroens River does not appear to run up the country, but rather looms like a bay, with low land and detached tall trees at the bottom of it; and a stranger may be easily deceived if he does not take the above precaution of keeping on the North side of the river.

"At Greenpatch the tide flows at 5ʰ 30′, full and change, and rises above 8 feet. The water at Camaroens Town is fresh and fit for use, if filled from between half ebb and low water.

"Dysentery and intermittent fever are very prevalent diseases in this river, but their severity may be much alleviated by keeping the vessel as dry as possible. The worst effects have resulted from the unnecessary and very pernicious practice of washing decks at night, in this as well as other African rivers. In all the rivers of Africa, but particularly in the Camaroens, ships should have a considerable stock of *quinine*.

"Vessels intended for Camaroens should be well provided with good ground tackling, and be well manned and armed; for the tides are uncommonly strong, and the natives are of a very warlike and turbulent disposition, and universally dishonest in all their dealings. Their kings or chiefs have no power over them; and in chicanery, low cunning, and treachery, they far surpass any other people on the coast of Africa."

The intermediate coast southward between the Camaroens and Corisco Bay, during five days' sail, appeared at a distance like one continued range of low banks, thickly covered with wood, and with only a few small creeks to break off the connection. It appeared to be well inhabited; but the villages are so buried amidst the trees, that it is with difficulty they can be discovered. Many canoes came off, as the *Barracouta* ran along, bringing quantities of fish, fruit, vegetables, &c.; and although the ship was going about 6 knots an hour, yet they contrived to keep up with it for a considerable distance. These canoes are not more than 12 feet in length, by about 2 in width, and are built sufficiently light to allow a person to take one on his back when no longer required upon the water. The natives are extremely dexterous in their management; and although using but one paddle, propel them with great velocity: when they wish to lessen their speed, they throw a leg out on each side, and stop almost immediately.

BIGHT of PANNAVIA.—From Point Suellaba, or the South point of Malimba River, the coast trends 16 miles S. ¼ E. [*S.S.E.*] to the mouth of the *River Borea;* and from the mouth of the Borea to the bottom of the *Bight of Pannavia*, 38 miles S. by E. [*S.S.E. ¾ E.*] All the shore is low, and covered with trees. In the run you may descry the River Borea; but it has a bar, passable in boats only. Many forests of palm trees cover the high land. The soundings, at a league from shore, are generally 5 and 5½ fathoms. In the bottom of the Bight you can safely anchor, near the shore, in 4 or 5 fathoms, muddy ground. In the bottom of the Bight, in its S.E. part, is an excellent watering place.

From *Point Garajam*, known by its cascade, at the South end of Pannavia Bight, the coast assumes another direction, trending to the Rio Campo S.S.W. ¼ W. [*S. ¾ W.*] 13 leagues. It continues low, and covered with trees, except within 3 or 4 leagues of the point, where it rises into naked hills.

BANOKO.—These villages were first noticed by M. Bouët-Willaumez, the French Governor of Senegal, who despatched Lieutenant de Kerhallet to examine them. The subject of his report is as follows:—At 3 miles North of the Rio Campo there is a point, remarkable only by two hillocks standing opposite each other. Still farther North are two more sandy bays, the rocky points which divide them having the sea washing their bases. At the head of these points begins the roadstead or Bay of Banoko. This bay is not deep, and is easily known by the high lands around it. One of these mountains, named *Alouette Mount*, is 1,041 feet high, and slopes gently toward the North. The trees at its foot are on the shore, and are high. It is bluff to the South, nearly vertical, and joining the first line of heights from the shore. When off-shore, especially making it from the South, two other round mountains appear far off in the interior; on a nearer approach they sink behind the nearer hills. Another mark is *Mount Nisus* very far inland, lying

East and West with Mount Alouette. It slopes gently to the South, but is nearly perpendicular to the North, and in some positions a sugarloaf mountain is seen near it.

The four or five villages of *Banoko*, which give name to the bay, are not seen, even from the anchorage. In coming to this bay, bring the Alouette Mount to bear E.S.E., and approach as near as the breeze will allow you, and anchor in 5 or 6 fathoms. The villages are extensive, and have sunk in the production of ivory.

The RIVER CAMPO is known by two mountains to the northward of it, several leagues inland, and named, after their shape, *Saddle Hill* and *Table Hill:* the latter is the southernmost. On the South point of the river lies a shallow stone bank, that appears at low water, and on which the sea breaks with great violence. According to the French officers, there is a whitish islet off the coast in lat. 2° 10′, which is a good landmark for this part. At 4 miles beyond it is a small bay (Bata).

Four leagues and a half from the River Campo lies the small *Bight,* or *Cove, of Bata,* wherein there is good anchoring ground in 6, 5, and 4 fathoms; as also good ballast and fresh water. A few houses, close to the water side, are scattered along the shore, which is very low and woody, and its strand is seen at low water. From hence you descry the Seven Hills, lying in a row from *N.N.E.* to *S.S.W.*, *true*, about 6 leagues inland: the middle one, a sharp peak, is the highest (2,786 feet); and they have nothing remarkable but their ill shape. Some of them (says the Portuguese pilot) have the appearance of elephants.

RIVER ST. BENITO (properly St. Bento) lies 16 leagues S.W. ½ S. [*S. by W. ¾ W.*] from the River Campo. It has 3 or 4 fathoms in the entrance, which is narrow, and 4 miles within it: the North point is remarkable by a great hill, called the *Heybern;* the South point, about 2 miles from it, is steep-to; and a reef extends along the coast, with some rocks above and under water, to the inward of the River. This coast is all covered with trees; nor are you free from it when in 18 and 20 fathoms of water. At 4 or 5 miles up, the River divides into two branches, to the E.N.E. and E.S.E.; and on these a very extensive trade for ivory was formerly carried on.

CAPE ST. JOHN, in lat. 1° 9′ 40″ N., lon. 9° 21′ 35″ E., is 10 leagues S.W. ¾ W. [*S.W. by S.*] from the River St. Bento. The coast between is irregular, rocky, and foul. At about 8 leagues inland, between these places, is a mountain, 3,940 feet high, which, from its form, is known by the name of *Mitre Hill.* To the southward of the River St. Bento, one-half of the coast is low and woody; the other half, ending at Cape St. John, is rocky. The Cape itself, surrounded with a ridge of rocks, has no beach; and 2 or 3 miles off its pitch lies a small stony bank, with 7 or 8 fathoms of water on it. The streams, meeting here with impetuosity, caused by the great unevenness of the ground, the water, which comes from the South, beats violently against the Cape, and then runs swiftly along to the northward.

On a track survey of this coast, in the pinnace of the *Barracouta,* the country appeared beautifully picturesque, presenting a most pleasing diversity of hill and vale; but the natives gave demonstrations of determined hostility, and it was found prudent not to allow them to approach in any numbers, and also at night to lie at a convenient and safe distance from the land.

From Cape St. John the coast trends S. by E. ½ E. [*S.E. ¾ S.*] 1½ leagues, to the N.W. point of Corisco Bay; and it forms two slender sandy coves, divided by a rocky headland, toward which are regular soundings.

CORISCO BAY, between the N.W. point above mentioned, and *Cape Esterias,* to the South, presents an extent of 10 leagues. Nearly midway is the isle called *Corisco* (or Thunderbolt) *Island,* the N.W. point of which is 14¼ miles S.S.W. ½ W. [*S. ¾ W.*] from Cape St. John.

The North part of the Bay forms a semicircle, 12 miles in breadth, into the N.E. side of which falls a river, the *Möoney,* from the N.E. The entrance of this river is a mile in breadth; and off it, at the distance of 5 miles, are two islets, called *Elobey Isles* (formerly *Mosquito*), having several rocks and shoals about them to the North and N.E. From the N.W. point of Corisco Bay these islets bear S.S.E. [*S.E. ¼ S.*] 10¼ miles; and from the N.W. end of Corisco Island, E. ¼ S. [*E.N.E. ½ E.*] 4 leagues.

From the River Möoney the eastern coast of Corisco Bay trends nearly *true* South, *7 leagues,* to the mouth of a larger river, the *Möondah,* which is 5 miles in breadth. *The water* along shore, between the two rivers, is shoal to the distance, in some part, of

3 miles from shore. The general depths at the entrance of the Möondah are from 3 to 5 fathoms. From the western point of the Möondah to Cape Esterias the coast trends W. ¼ N. [*W.S.W.* ½ *W.*] 4 leagues.

The N.W. point of Corisco Island lies in lat. 0° 55′ 54″ N., lon. 9° 19′ 45″ E. This isle is rather more than 3 miles in length from North to South, and 2 miles in breadth. At a mile from its S.W. side is an islet named *Laval*, with a reef about it. From its S E. a narrow reef extends 2 miles to the eastward; and there is a shelf extending from the northern shore. The island is low, but overgrown with high trees, which seem to stand in the water. The tide flows here, on the full and change, at 5^h; the rise is 7 feet. Variation of the compass, in 1838, 20° West.

At 5 miles S. by E. ¾ E. [*S.S.E.*] from the S.W. point of Corisco lies an islet, called *Baynya*, or *Little Corisco*, having several shoals, &c., about it; and a flat extends 1½ leagues from it to the S.W. In the channel between the latter and Cape Esterias the depths are 5 and 6 fathoms; but shoal water extends halfway over from the southern shore.

The *River Möoney* was formerly described under the name of *Rio da Angra*, or *St. John's River*. From the N.W. point of Corisco Bay its entrance bears S.E. ¼ E. [*E.S.E.*] 13 miles. In the direct course between, the depths are from 6 to 5, 4½ to 3 fathoms; but more to the South are several shoal spots of 2 and 2½ fathoms. From the same N.W. point, the entrance of the River Möondah bears S. ¼ E. [*S.S.E.*] 28 miles. The least depth on the Bar of the Möoney, at some distance without the River, is 13 feet. Within and without it is all soft ground, and variable but increasing depths.* Of the Möondah, within the entrance, nothing seems to be yet known.

The natives of the *Möoney* were reported as being very unfriendly, and particularly inimical to Europeans; and as the inhabitants of all the islands gave them the same character, and will not even allow them to land, it may not be without foundation. Whilst the *Barracouta* was employed about these islands, the natives were continually coming on board: they were found very docile, and passably honest; a fortunate circumstance, as they supplied the vessel plentifully with every description of fresh stock and vegetables.

The *River Möondah* was found to be so shallow that it was not considered worth while to continue an examination upward. The banks on each side appeared thickly wooded, and, as far as the eye could see, very low, with the exception of a few sand-hills to the right: neither was there the least appearance of inhabitants.

CORISCO BAY is described as follows, in the Narrative of the Expedition under Captain Owen:—This place derives its name from the Portuguese, being imparted from the constant thunderstorms by which it is visited. The Bay is 32 miles, North and South, from Cape St. John to Cape Esterias, and 15 from the islets which are situated off the entrance of the River Möondah. The surrounding shores are thickly clothed with verdure; the numerous islets with which it is studded being also green to the water's edge.

The people here, particularly the females, are a very degraded race: but in 1826, shortly after the arrival of the *Barracouta* off Great Corisco (the principal island), Jack Romando, a kinsman of their King Jem, and who in his early years had visited England, went on board, and produced various certificates highly creditable to his honesty and humanity. The inhabitants of the isles greatly resemble those of the Gaboon, a little to the southward, in manners and dress; but, strange to say, their language is totally different.†

---

* The MÖONEY is said to have been much frequented by the Portuguese for ivory, ebony, bar wood, and pod pepper, obtainable at a moderate rate, for common cloths, iron-ware, tobacco, rum, beads, &c. By coming to an anchor off Corisco, a ship may load with bar wood in a few days: but, to procure ivory, it is requisite to proceed to the town, about 3 leagues up the River, on the North shore; taking every precaution against treachery on the part of the natives. Off the town is anchorage in 5 fathoms, sand and gravel. The river has been described as navigable 3 or 4 leagues farther up to the N.E., and then contracting into a very narrow channel.

† Captain Vidal has said that, along the West coast of Africa, those natives who speak English are in the habit of using a number of words and phrases, often so strangely misapplied as to create much amusement. Among the most remarkable are, "bob," for noise or threats; as "Suppose I tief dat man wife, bob come my side;—"lib," or "live," for remain, or to express locality; as "Ship lib here two moons;" "Rock lib here;"—"chop," for eating; as, "Suppose you go long way among Bullaman, he chop (eat) you;" &c. All officers under the rank of captain they term "mates."

When Lieutenant Boteler, in the pinnace, was passing along shore, from the River Gaboon, off a large village, four canoes laden with plantains paddled out after him with so much rapidity, that although he was sailing at the time before a moderate breeze, they quickly overtook the boat; but before venturing alongside, loudly exclaimed in tolerably good English, "I tay, you mate, you no big rogue? ship no big rogue?" A favourable answer being returned, these simple people approached with the utmost confidence to traffic. Cloth was the article they set the greatest value upon; and next to that, tobacco, the smallest portion of which was equivalent to a large bunch of plantains, and the addition of a brass bangle would purchase a goat. Even at Corisco, tobacco is held in high estimation; which is rather a singular fact, as at the Gaboon, but a few miles distant, it is hardly of any value.

The towns situated on Cape St. John are under the dominion of the king of Corisco, but the other places around the Bay are inhabited by *Bullamen;* a very wild and savage but timid race.

The Corisco Islands are very fertile in appearance, and productive in reality; the largest, called *Great Corisco,* being about 3 miles long, by 2½ broad: at the South end is a populous town, with a good anchorage, at 1¼ miles from shore, in 7 fathoms of water. There are, however, several patches of rock in the neighbourhood, which being slightly covered above, and surrounded by very deep water, renders them extremely dangerous, making it requisite for vessels to take every precaution when in their vicinity.

RIVER GABOON.—The River Gaboon or Gabon has been surveyed under the orders of M. le Comte Bouët-Willaumez, by Lieutenant Fleuriot de Langle, in 1844. This French officer has made an elaborate report on the hydrography of the river, or rather estuary. But there is one point which demands notice—that the names which have been applied in former years have been replaced by other and recent French names, in addition to applying similar appellations to points not previously named, which may cause some confusion in the nomenclature.

M. Bouët-Willaumez speaks in high terms of the Gaboon; having passed entire months there without having to deal with the maladies so common in the Bonny. The vegetation he describes as magnificent, only to be compared to that of Guyana; wood of all kinds, for building, dyeing, ebony, &c. Ivory is also a great feature in the trade; cotton and other tropical products will doubtless form features in the future commerce.

In 1843, M. Bouët-Willaumez, as governor of the Senegal, was charged by the French Government to found on the right bank of the Gaboon an establishment for the trade, and for the refitting and refreshment of the ships employed in the French cruising squadron on the Coast of Guinea. The primitive establishment, called *Fort Aumale,* was then constructed, and is the basis of the French possessions here, which have been gained by treaty or purchase from the natives at different periods.

The peninsula which separates the Gaboon from the River Möondah has been named *Louis Philippe Peninsula.* It is bold, and on the highest hill, which has been named *Mount Bouet,* there is an enormous tree. These characteristics form a good landmark, at about 12 miles distance in approaching from seaward. The southern side of the entrance is called *Marie Amelie Peninsula,* and is low and flat; the distinction between the two sides of the river making an important difference in the landfall.

In the subsequent descriptions we have retained those names which have been applied in former times, and are those according with our English Admiralty Surveys, which, however, are not perfect.

Cape Esterias, before noticed, lies, according to Captain Vidal, in lat. 0° 37′ 48″ N., lon. 9° 21′ E. The shore about it is rocky and foul. From the Cape to *Point Clara,* or *Joinville,* at the entrance of the River Gaboon, the coast trends S. by W. ¼ W. [*S. ½ E.*] 7 miles. It is, in general, bold, and covered with trees; but about Point Clara (Joinville) are several sunken rocks. At half a league from shore are 7, 6, and 5 fathoms. Point Clara is in lat. 0° 30½′ N., lon. 9° 20½′.

From Point Clara, *Sandy Point* (or *Cape Montagniés*), on the South side of the River, bears S. ¾ W. [*S. by E.*] 8¾ miles. Here the sea is constantly bubbling and agitated, in consequence of the shoalness of the water and the bottom being very foul. At 4 miles S.W. by W. ½ W. [*S.W. ¼ S.*] from Sandy Point is *Round Corner Point,* distinguished on each side by elevated land, which serves as marks for the River. Within 3 miles of *Sandy Point,* to the N.W., are several shoal spots, which may render an approach on that side unsafe. When approaching from the northward, in 5 or 6 fathoms, you have fair ground, at a sufficient distance from land, and may, even by night, approach within half a league of Point Clara; allowing, however, for the stream, which sets strongly in and out, on this side of the River. On approaching, you will find rocky bottom, and so uneven, that at one cast you will have 15 or 16, and at the next only 5 and 6 fathoms; but the space is so wide that you can receive no injury. Your course in is S. by E. ½ E. [*S.E.* ¾ *S.*] to the distance of 5 leagues, which will bring you off the bend of the River at *Red Point*, otherwise called *Owëendo*, or *Rodney's Point.**

A trading town, called *King Qua Ben's Town*, stands on the eastern shore, facing the sea, at S. by E. ¾ E. [*S.E.* ½ *E.*] 3 leagues from Point Clara; and another town, *King Glass Town*, stands on the same side, at 3¼ miles S. by E. ½ E. [*S.E.* ¾ *S.*] from Qua Ben's Town. From King Glass Town to *Owëendo* or *Red Point* the coast trends S. by E. [*S.S.E.* ¾ *E.*] 6½ miles. Here the River forms a great bight to the eastward, which has not yet been surveyed. At 2 miles to the S.E. of Red Point is a small island, called *Dambee* or *Konikey;* and at 3½ miles to the S.W. of this is a smaller, called *Embenee*, or *Parrot Island.* Between these, in the channel, are 6 and 7 fathoms of water. Between Red Point and Parrot Island are 6 and 5 fathoms.

It is said that, at about 7 leagues higher, the River forms two arms; the one extending N.E., by a point called Ohlombompole by the natives of Gaboon, and Gongoloba by the Shekans or interior people: its entrance about 4 miles wide. The other apparently extends *S.S.E.*, *true*, by a point called Quawkau and Quanlie by the two nations, and is about 2 miles broad.

Vessels standing in for the River, from the southward, should give Round Corner a good berth, and shape a course towards Point Clara, so as to avoid the shoals off Sandy Point. Thence proceed to the S.E. toward Qua Ben's Town, and you will have, at 2 2 miles from its projecting point, from 6 to 9 fathoms of water. At 3 miles farther, off King Glass Town, are 7 and 8 fathoms, at the same distance from shore. You may safely anchor on any part of the shore, in 4½ to 6 fathoms, at a mile off. Between Konikey and Parrot Isles is good anchorage in 7 fathoms, soft muddy bottom. There is a good watering place within Owëendo, or Red Point.

Several years ago, when the ship *Lord Mulgrave* lay in the River, completing her cargo (red-wood and ebony), Mr. Bowdich made many inquiries among the more intelligent natives as to the geography of the interior country, the results of which he has given in his book. He, in particular, visited *Naango*, or *King George's Town*, 2 miles up a romantic creek, Abaaga, about 45 miles from the mouth of the River; and found the governor a very hospitable and intelligent native, who spoke good English. Here, also, he saw two young negroes, the sons of native rulers, who spoke and wrote French fluently. The one had been sent to that country for education; and the other, in his voyage to England, for the same purpose, was taken and carried to France, and generously educated and maintained by the owner of the privateer. Both remained in France upwards of 8 years, before they were sent back to Gaboon, and both professed to be very anxious to return thither; depicting the native habits, not only as uncongenial, but disgusting to them. The native name of the country, which we call Gaboon, is *Empoongwa.* Mr. Bowdich considers its extent as only about 40 miles in length, by about 30 in breadth. Kings, he says, are numerous here, and scarcely comparable even with the petty Caboceers of Fantee. The greatest trader, or the richest man of every small village, assumes the title, and frequently suffers gross indignities from his subjects, from not having the power to punish them. The king of Naango seems of acknowledged superiority, and is comparatively respectable, both in means and power; he is known to trading vessels by the name of King George. The brother succeeds before the son. The legislative and judicial power is vested in the governor, controlled by the king, who may order the death of a man; but if he assigns no good reason, the offending party is generally allowed to retire elsewhere. All children share the property of the father in equal portions, except the eldest son, who has about half as much again as any other. If a man kills another, he has a public trial; and, if he cannot justify the act, which it seems he may in many instances, his own death is inevitable. If he kills one of his wives (his rank is designated by the number), he pays a fine to her family, who, and not the husband, are involved in all her palavers. The acknowledged heir to a property may bring a palaver against his father, or whoever may be possessed of it, for killing a slave unjustly, or otherwise injuring the property, and oblige him to make good the injury.

---

* Here it may be noticed, that no idea of the true form of Corisco Bay, the Gaboon, &c., can be acquired from the old and common charts of these coasts; the survey of it, by Captain Vidal, is published by the Hydrographic Office.

The old Directions say, "If you would go from the trading town to anchor under Parrot Island, in order to clean or repair your ship, you are to run with the ebb right upon the island: upon a point on the North side of the land stands a large tree, that is to be left on the starboard hand, and you steer along between two stony points, dropping one anchor to seaward, and another toward the land; then you haul your ship on the ground at high water, fastening with your ropes to the cliff, two on larboard, and two on starboard. At this place the perpendicular rise of the tide is about 8 or 9 feet."

"The River Gaboon combines every facility for trade, the navigation being easy, having no bar at its entrance from which danger is to be apprehended, and the ascent being free from obstacles for several miles. The climate, however, seems unhealthy; as though the country rises in some places into considerable hills, yet there is nothing but low swamps between them and the river.

"Captain Vidal gives Round Corner, near the southern point of this river, in lat. 0° 18′ 5″ N., lon. 9° 20′ E. On anchoring, he was visited by *Tom Qua Ben*, brother to King Qua Ben, whose capital is an extensive town. Tom Qua Ben was dressed in the laced coat of a mail coach guard, and from his well-favoured and portly appearance did credit to the character. Being the first on board, he was extremely solicitous to be chosen captain's 'tradesman,' producing certificates of the fidelity with which he had acted in that capacity for various masters of merchant vessels which had visited the place.

"These 'tradesmen,' as they term themselves, are generally the principal inhabitants, who are intrusted by the masters of vessels with goods, in order to purchase such articles in return from the *Bullamen*, or natives of the interior, as they require. A man or woman is always delivered up, as an hostage for their honesty.

"The natives of Gaboon are a fine looking race of negroes; they nearly all speak English with fluency, and generally understand it. But here, as elsewhere, fetishes, carried on the person, are generally worn as protections against poison and violent deaths; and it would appear that they are subsidiary to the resident fetishe, one of whom is supposed to exist in every town. The ordinary cruelties and superstitious observances of the country also prevail here.

"The trade of the River has consisted, principally, in slaves and ivory; the former on a great scale, with the French, Spaniards, and Portuguese; the latter with the English. Camwood was also in great demand during the late war, for army clothing; but since the peace this trade has almost ceased.

"These people, like all savages, are difficult to trade with, postponing the conclusion of their bargains until the patience of those with whom they deal is exhausted; and, when the agreement is made, they commence endless persecution for a *dash*, or present, '*to make friend*.' Should the article they part with be valuable, they will take assorted goods only in exchange. Thus, for two large tusks taken on board the merchant brig in the river, weighing together 130 pounds, the native to whom they belonged received the following articles:—four muskets; two neptunes (large brass pans); two iron kettles; four pieces of cloth; assorted fish-hooks; earthenware beads; copper bars; one jar of rum."—*Owen*, Vol. II., p. 320.

On the morning of the day after the *Barracouta* arrived here, in 1826, several canoes came to barter. The people were from *King Glass Town*, on the North side of the River: they appeared docile and very desirous of "making trade with the English;" a character quite opposite to that which report had given them, or rather the jealousy of their neighbours to the southward; in fact, many of them had certificates from different masters of vessels, both English and Portuguese, wherein they mentioned having left with them articles of barter to a very large amount, which, on their return, were faithfully given up and accounted for; and as they have great intercourse with our traders, many of them speak English with some fluency. The vessel anchored near a brig which lay just off the town, whereon the British colours were hoisted. Having procured an ensign from some vessel, and not being particular, numerous canoes immediately came well stocked with fruit, fowls, &c.; and through the master of the brig, who possessed some influence, a quantity of goats and vegetables were obtained, which are, otherwise, very difficult to procure, in consequence of the scarcity. The *ladies* came on board in great numbers, *never having* seen a "man-of-war ship," as they expressed it, before. These women are *possessed of* much natural grace and beauty.

The natives came off in great numbers upon hearing of our intended departure, bringing parrots, honey, plantains, bananas, and every description of provision, all of which were in much request, and a great deal of trading took place; when, having completed a survey of the river, and recruited the stock of wood and water, we weighed and stood along shore to the northward.

All these remarks, however, as to the natives and their dealings with Europeans, require to be qualified now by the circumstance of the French possession.

WINDS ON THE COAST.—Along this part of the African coast, from June to October, the winds vary very much from S.S.W. to S.S.E. in the twenty-four hours; which renders it advisable for vessels beating to the southward to tack accordingly, and take every advantage of a slant; also to stand in for the shore after midnight, for the benefit of the land wind, which sets in toward the early part of the morning. The current most commonly runs to the northward, about 18 miles in the twenty-four hours, but sometimes varying to the southward with the change of the moon.

RIVER GABOON TO CAPE LOPEZ.—From Round Corner to Cape Lopez the coast forms a bay, 22 leagues in extent, between the two points, and presents land more generally elevated than that to the northward, with white downs, covered with trees. At the bottom of the Bay the land breaks, and forms several rivers eastward of Cape Lopez, the chief of which is the River of Nazareth.

The coast is all clean and safe from Round Corner to a little isle near the coast, named *Fanaes Islet*, which bears from Round Corner S.S.W. ¼ W. [*S.* ½ *W.*] 13 leagues. From this islet the mouth of the River Nazareth bears S.W. by W. ¼ W. [*S.W.* ½ *S.*] 16 miles, being on the same parallel as the extremity of Cape Lopez, or lat. 0° 36′ S. On the West point of the mouth of the Nazareth River is a little town called *Fetishe Town*, upon a low sandy point. Cape Lopez bears from this town W.N.W. [*W.* ¼ *N.*] 17½ miles, in lat. 0° 36′ S., lon. 8° 40′. All the coast eastward of Cape Lopez is low and sandy, covered with trees and bushes, and shoals extend from it to the distance of 5 or 6 miles out to sea.

CAPE LOPEZ was originally called by the Portuguese the Cape of *Lopo Gonsalvez;* but it is improperly termed the *Cape*, being a drowned land, which, at first sight, appears all rugged, and with bushes that seem to stand in the water. It is steep on the sea side, free from flats and reefs, and may be approached as near as convenient. The inner coast trends to the S.S.E. 4 leagues, and thence forms a river, the South end of which falls into the sea, on the West, at 7 leagues to the southward from the point or cape: thus, in fact, forming an island.

From the inner part of Cape Lopez a spit of 12 to 18 feet extends to the N.E. about 5 miles. In the bay within this are from 20 to 14 and 9 fathoms. Here also is anchorage, in 8 or 10 fathoms, bringing your small bower to seaward, almost in 12 fathoms; but in the months of June, July, August, September, and October, you need not moor the ship, as the wind blows always from the South.

When you come from the northward to Cape Lopez, you must take great care to avoid the N.E. spit above mentioned, as it cannot be perceived until you are very near it: for, at about 1¼ leagues from the N.E. side of the Cape, you may have 10 or 12 fathoms at one cast, and the next find yourself aground.

In this place there is plenty of fish, but no mutton or beef. The negroes are very officious, and for the smallest trifle will supply you with water, wood, and fish.

When you are sailing from the River Bento or Cape St. John to Cape Lopez, always observe which way the *trovado* drives the water; and should you lie at anchor when it arises, you must weigh immediately, and get off; if it be in the morning, with a S.W. or South wind, keep to seaward till noon, then stand again toward the shore with a sea wind; but if the wind does not alter at noon, tack about for all that, and go to the shore, there to anchor in oozy, and sometimes sandy ground.

In the narrative of Captain Owen's Expedition it is said Cape Lopez is in lat. 0° 36′ 2″ S., lon. 8° 40′ 4″ E. It is covered with trees, but is low and swampy, as is also the neighbouring country. The extensive bay formed by this Cape is 14 miles in depth, and has several small rivers and creeks running into it, some of which, to the southward, apparently communicate with extensive lagoons. On the left point of the largest and northernmost of these rivers is situate *King Passol's Town*, the only assemblage of huts in the Bay. The buildings resemble English cottages. The king's residence was at the unfortunately Mr. Becroft was recalled, and several agents successively filled his post, with but little benefit to the settlement. In October, 1842, the West African Company sold their rights and privileges to the Baptist Missionary Society, who transmitted a body of white and coloured teachers, whose labours, however, have not been productive of any benefit. Finally, in 1843, a Spanish man-of-war entered the harbour of Clarence, and on February 27 hoisted her colours, and resumed the dominion of the island on behalf of the crown of Spain, reinstating Mr. Becroft as sole governor and commandant, under whose authority it remained, till his lamented death in 1854.*

The aborigines of Fernando Po are designated *Adeeyah's* (accented on the last syllable), but they are better known under the term "Boobie," a word which signifies in their native language "stranger," and seems to have been applied by them to Europeans, from their friendly salutations of "*Cow-way, Boobie*" (How do you do, stranger?), when meeting together. These inhabitants, in development of form, possess several physical traits that contribute to sever them from those nations populating the alluvial lowlands of the Delta. Traces, however, of that structural affinity, which embodies the majority of the negro races into one family, are equally perceptible, although less prominently marked, in those organic points which more closely ally the multitudinous tribes in this part of Western Africa. In corporeal mould these people are well and firmly made, of a pliant and muscular rotundity, in stature slightly above the average negro standard (those of Camaroens excepted), and, from their active and regular mode of life, are of a vigorous and hard constitution. Obesity of figure, so much esteemed by their neighbours of the opposite coast as one of the perfections of a manly organization, and so ardently coveted by the females as the *ne plus ultra* of their beauty, is not appreciated among them in the same favourable light. A moderate fulness of contour, with a disposition to a compact wiriness of the trunk and limbs, may be said to constitute their physical exterior. The cranium, in its outline, partakes of the usual negro conformation, with compressed lateral parietes, retiring forehead, and woolly hair. The face, though somewhat disfigured by their national tokens, viz., three or four large cicatrized incisions, extending obliquely from the zygomatic arch to the angle of the mouth, is somewhat prepossessing, and, in many instances, resembles those of Europeans. The features, from their attenuation and regularity, are less heavy and unmeaning, while the chin and lower facial outline partially lose that harsh, angular prolongation so predominant in African communities and elsewhere. Their skin, of a brownish black, is frequently daubed over with a yellow ochre, and red clayey pigment, the latter of which they likewise incorporate with their hair in transverse bands and long pendent jets. With the exception of a few tufts of dried grass suspended over the pubic region, both sexes are publicly seen in a complete state of nudity; most of them being decorated with broken shells, the vertebræ of snakes, and other rude ornaments of savage life. The inhabitants of this isle, from their secluded and scattered villages, are rarely seen in sufficient numbers to furnish any statistical information; and it is, therefore, from the absence of these necessary details, difficult to arrive at any precise conclusion in respect to the total population. They have been computed, at different periods, to vary from 7,000 to 10,000. Within the last few years there has been a progressive increase, and their numbers now would fall very little short of 12,000. They are not amenable to any fixed government, being subdivided into a series of petty tribes, each of which is placed under the jurisdiction of its own independent chief, *Koklerakoo*, whose power, though unrestrained, is not so arbitrary as the monarchical despotisers of the continental chiefs.

"The Boobies are a quiet, inoffensive, and unassuming race, tolerably shrewd and intelligent, very kind and affable to white visitors, and fully as warlike and turbulent among themselves, as evinced by their frequent fierce intestine wars. Differing in several respects, not only in languages, manners, and mode of life, from other African nations situated near them, they are still, however, tinctured with their superstitious fears and prejudices, adhering, but in a milder degree, to their barbarous laws and debasing customs.

"The Boobie towns are chiefly built on the denuded crests of the midland slopes, and generally consist of from fifteen to twenty habitations, which may be considered as mere sheds. Adjoining them are enclosures for the preservation of sheep, poultry, goats, &c.,

---

* Medical Topography, &c., of West Africa, by W. F. Daniell, M.D., F.R.G.S., 1849, pp. 140—143; and Manuel de la Navigation a la Côte Occidentale d'Afrique, par Capt. C. Ph. de *Kerhallet, tome iii.*, 1852, pp. 4, 5.

of which they rear moderate quantities for sale. Surrounding these villages are plantations of yams, cassada, palm and plantain trees, and other clearances set apart for future cultivation. Of late years, the requisitions of homeward bound vessels have enhanced the value of stock and other provisions; and from the supply being inadequate to meet the pressing demands, the prices have consequently much advanced."[*]—*Dr. Daniell.*

CLIMATE.—This is a subject of the greatest importance, and yet it is one on which very opposite opinions have been expressed. Mr. Bayle, colonial surgeon of Sierra Leone (who however never visited or saw the island), has in his "Diseases of Western Africa," p. 354, given opinions most unfavourable to its utility to Europeans on account of its unhealthiness. Dr. Daniell, on the other hand, who, having resided there, is better qualified to judge, combats this assertion, and states that in most parts it is quite healthy, and that to pass a general censure on its influences is quite unwarranted from experience; the low shores in some parts, among which the settlement of Clarence may be included, are very productive of disease at some seasons, but this is merely local. "Had those individuals whose anxiety has hitherto been to depreciate the utility, or decry the healthiness of this island, been resident for the same number of years with myself and others in the pestilent swamps of equatorial Africa, they would ere this have learned to appreciate the value of the boon so appropriately placed within the grasp of most African voyagers, and one which, above all other considerations, is prized by the convalescent, viz., the rescue from a premature death, and the restoration to the usual occupations of ordinary health."[†]—*Dr. Daniell.*[‡]

The appearance of the island is extremely beautiful. Two high peaked mountains (one of them remarkably so), the black sand on the beach, and the scoriæ and other substances, which had evidently undergone the action of fire, denote it to be of volcanic origin.[§] From the northern extremity the land rises, in a gradual slope, to a ridge of hills which connect the two peaked mountains, and the whole surface of the slope is covered with a forest of trees of the most luxuriant growth. Beyond this region of wood, the crest of the hills, and the sides of the mountains, as far up as about one-third of their height, appeared to be generally in a state of cultivation: on the summits of these hills stand the towns and villages of the natives. The houses are of wickerwork, all nearly of the same size and plan; they are built round an open area, and each is surrounded with a railed fence, or enclosure, within which their cattle are shut up at night.

"Numberless little streams were trickling down the sides of the hills into a noble bay on the North side of the island; besides three very considerable rivers, one at each extremity, and the third about the middle of the Bay: at all of which ships may water

---

[*] Medical Topography, &c., pp. 134—137.

[†] The following table, carefully drawn up by Dr. Daniell from his own observations, combined with those of Colonel Nicholls and Mr. Becroft, chiefly made at the Government House, will give a clear view of the nature of the climate:—

Months.	Temperature. Fahr.				Remarks.
	6 a.m.	2 p.m.	8 p.m.	Mean	
Jan.	72·0	85·0	80·5	79·1	Fine, clear weather; with light and pleasant breezes.
Feb.	73·0	86·0	84·5	81·1	Fine, but rather sultry weather; fair sea breezes.
Mar.	72·5	87·0	81·0	80·1	Fine weather; light airs and sea breezes, occasionally sultry.
April	71·0	84·0	80·0	78·3	Weather much cooler; slight rains towards the end of the month.
May	70·0	80·5	74·0	74·0	Rains and strong sea breezes; occasionally tornadoes.
June	69·5	80·5	70·5	70·5	Rains heavy; cloudy weather, with tornadoes.
July	71·5	80·0	74·5	75·3	Rainy and cloudy weather; with occasional tornadoes.
Aug.	70·0	80·5	76·0	75·5	Rains decreasing; frequent calms, and slight showers.
Sept.	67·0	79·0	78·0	74·7	Ditto; slight showers, light sea breezes.
Oct.	71·0	80·0	76·0	75·7	Fine weather setting in; sea breezes, with occasional showers.
Nov.	73·0	83·0	76·0	77·3	The commencement of the dry season; fine weather.
Dec.	73·5	84·0	76·0	77·8	Fine, clear weather; sultry, with light winds.

[‡] Medical Topography, &c., p. 162.

[§] The peak (Clarence Peak) was first ascended by Mr. Becroft in 1843, when the crater appeared to have been of a very ancient date, and was composed of pulverulent lava, around which existed a circular space destitute of any vegetation. In altitude it is 10,190 feet above the level of the ocean, and in fine clear mornings of the rainy season may be observed from the town of Old Calabar, a distance beyond 100 miles.—Dr. Daniell.

with the utmost facility. A small island, covered with wood (which may be procured here in any quantity), and inhabited by about a hundred families, who subsist by fishing, affords shelter to that part of the Bay within it. Though the thermometer of Fahrenheit rose to 86° in the afternoon, the land and sea breezes gave to the temperature a freshness quite unknown on the adjacent coast. And, as a proof of the goodness of the climate, it may be observed, that no appearance of those loathsome diseases, elephantiasis, scrofula, guinea-worm, hydrocele, &c., to which the negroes are so subject, was perceptible among the many hundreds who crowded to the coast on the occasion of this visit.

" Round the Bay the country rises in a grand and beautiful amphitheatre. ' Next to the Bay of Naples,' says Captain Kelly, ' I know of no place more capable of being converted to a finished picture by the hand of art and industry than this: let only the immense forest on the slope give place to cultivated plantations of sugar canes, the brows of the hills be studded with coffee trees, and a town of sufficient importance to form the capital of the island be built on the rising ground near the East angle of the Bay, where a river would flow beneath it, navigable for boats drawing 7 and 8 feet of water; and Fernando Po would far surpass any of the islands of the British possessions in the West Indies.' " *

Previously to the late surveys by the officers under Captain Owen, the Island of Fernando Po was very erroneously given on the charts, with respect to both position and figure; and so inaccurate was the latter, that the Bay on the North side, under the name of *N.W. Bay*, was blended with that on the West, now denominated *George Bay*; one bay only having been described.

CAPE BULLEN (Cabo Formoso), the N.W. point, is a considerable projection to the S.W., and also to the East of which the coast forms small bays. Around its foot are a large number of rocks, which do not extend far off, and, moreover, most of them are visible. On its summit are some remarkable and very high trees. The North coast of the island runs nearly in a straight line to Cape Horatio, the N.E. point, presenting a great number of small bays, the chief and best of which is Maidstone Bay (Santa Isabel).

At 4 miles S. 60° 30′ E., *true*, from Cape Bullen is a low point called *Ponta de la Trinidada*, remarkable by a large tree; it is the West point of a slender bay, with a sandy beach 1 mile in extent. Its East point is *Ponta del Condo*, pointed and projecting, and separating it from *Cockburn Cove* (Bahia da Venus), which, like the former, has a brook, *Cockburn Brook*, running into it, but otherwise full of rocks. *Point Adelaide* (Ponta Christina), a projecting hummock, separates the latter from the *Bay de St. Isabel.* Off Point Adelaide is *Adelaide Islet* (Isleta Don Henrique), which from the offing appears as three islets. It stands on a bank of from 3 to 10 feet water, and forms, with those off Adelaide Point, a passage not more than 100 yards wide, and 9 or 10 fathoms deep. The islet and its surrounding shoals form the western side of Maidstone Bay. The mark for clearing the edge of the bank is to keep rather to the East of Point Adelaide.

The island, being a Spanish possession, ought in reality to possess a Spanish nomenclature; but having been surveyed and occupied by the English, most of its points and features are generally known by English names. Nevertheless, as there are Spanish names now superadded in the ensuing description, &c., we have included them, written in parentheses, where they occur simultaneously.

MAIDSTONE BAY (Santa Isabel Bay) is a shallow bay, 2½ miles in extent, with soundings gradually shoaling inward from 24 fathoms. On its eastern side it is bounded by a tongue of land, named *Point William* (Peninsula Fernanda); within which, on the West, is a semicircular bay, called *Clarence Cove*. The western point of this cove, *Point Adelaide* (Ponta Christina), bears from Point William S.W. by W. ½ W., at the distance of half a mile. *Adelaide Islet*, off Point Adelaide, according to Captain Vidal, is in lat. 3° 34′ 48″ N., lon. 8° 47′ 17″ E.

This place was surveyed by Lieut. *James Badgley*, R.N.; and from this gentleman's plan, which is on a very large scale, we gain the following particulars:—Latitude of the flagstaff on Point William, 3° 45′ 36″ N., lon. 8° 45′ E. Variation of the compass, 23° W. High water, on full and change, at 4ʰ; rise, 7 feet.

CLARENCE.†—The anchorage at Clarence Cove, the principal roadstead of Fernando

---

* *Quarterly Review*, October, 1821.

† *Description*, &c., by Captain Fishbourne, R.N., *Naut. Mag.*, 1843, p. 83. It should be remarked that a great change has been affected since the Spanish assumption of authority.

Po, situated on the North side of the island, is very good, though the depth is from 10 to 15 fathoms: indeed, it is so abundantly sheltered, that considerable facility is afforded to vessels loading or unloading; while the perfect tranquillity and smoothness of the water, and the rise of 7 feet, admit of vessels being beached for repairs without danger. At present a fire is kept up by the Company's servants during the early part of the night, and being at the height of 100 feet above the level of the sea, it may be seen at a considerable distance. By bringing this on a S. by E. (*true*) bearing, and Point William 1 or 1½ miles distant, fair anchorage and a good position for entering will be found. It must be borne in mind that the current runs to the East and N.E. generally, 1 to 1½ miles per hour, and due allowance must be made for this, in steering either for the settlement by day or the light by night, depending on the preceding winds. Change in the bearings would give notice of this, and they should be attended to strictly.

The water is good, and may be obtained in any quantity without difficulty. Wood is plentiful, and of very superior quality, quite equal to the mangrove; 340 inches per horse power per hour being sufficient to keep steam with our engines working expansively at half stroke, yet still an efficient fuel. We paid 6*s*. 6*d*. for 100 pieces, containing about 33 cubic feet; but were a contract entered into for a large quantity, it might be obtained at a much more reasonable price.

The landing place is convenient at a wooden pier, which was built at the expense of the West African Company, and extending out to a depth of water that admits of vessels of 7 or 8 feet draught to go alongside.

The ascent to the plateau, upon which the town stands, being about 100 feet, and the road ill made, occasions much difficulty in the transfer of goods to the town; but this objection might be materially removed, and without much expense. There is a strip of land at and on either side of the landing place (from which the cliffs rise nearly perpendicularly), now partly occupied by miserable coal and store sheds, but of sufficient width, and generally adapted for good store room.

Clarence Town is situated on a plateau, 100 feet at least above the level of the sea, and receives much of the prevailing S.W. wind; but as this passes over a portion of land not yet quite clear, its salubrious effect is much diminished, as it must be surcharged with vapours. The houses are built of wood, seldom of more than one story, regular and cleanly; even taste is perceptible in their little arrangements, and a measure of comfort which implies circumstances far removed from want.

The fall of water in Hay and Horton Brooks, the former quite close to the town, is fully equal to turning mills for sugar, corn, and wood; and the ground so well adapted, that little expense would attend the preparing sites, &c., for regulating the supply of water.

Though this place is so near the Bonny, Calabar, and Camaroens, few vessels touch here; nearly all going to George Bay, where there is a settlement of Kroumen, who sadly maltreat the natives, and even supply the shipping with yams at their expense, or only give them nominal value.

I believe it is not generally known that there is excellent anchorage all along the North coast of Fernando Po, from the West point of Maidstone Bay to within a mile or two of Horatio Island. If bound to Clarence in the night, any ship may run round Cape Bullen with the greatest confidence, and anchor in 18 or 20 fathoms water, with the Peak, which is generally visible, bearing S. by W., or South; she will then be to windward of the harbour, and in the fairway for it. When at anchor in the harbour, the Peak will bear S.S.W. This is a good mark for finding the cove in the night.

Eastward of Point William there is less water; 10 fathoms, with soft bottom, will generally be found at a short half mile from the land; but it is most prudent to anchor in not less than 12 or 14 fathoms. The stream anchor is sufficient to use outside the cove, and when inside, the bower anchor.

The centre of Clarence Cove is an excellent berth for anchorage, and the depth will be 13 or 14 fathoms.

"A strong and useful wharf formerly stood in the centre of Clarence Cove, and constituted the landing place of the town; it has now partially disappeared, and the black sandy beach on either side of it answers the purpose. Some ruinous sheds and storehouses, once the property of the defunct African Company, lie around it; and to the left of them, on the strand, is a cleared space, on which the trading canoes of the natives are drawn up.

"The road leading to the town obliquely winds to the summit of the almost perpendicular acclivities, nearly 100 feet in height, the ascent of which, from their steepness, is extremely inconvenient. Commanding a prospect of the bay, is a range of seven or eight substantial and well built houses, whose snow-like exteriors may be discovered many leagues distant. They are now inhabited by the missionaries and more opulent colonists. Paradise, Government, and Longfield houses (the latter recently pulled down), were erected at the expense of the British Crown, and originally formed the residences of the executive and commissariat officers. Midway on Point William * is the building that once was reserved for the hospital of the settlement, and the sickly crews of vessels, but now ignobly desecrated by mercenary uses wholly in opposition to the humane intention of its founders. Though of restricted dimensions, and somewhat inefficient in its internal economy, its healthy and congenial site, isolated from the town, with its loitering inhabitants, somewhat partially redeems these deficiencies.

"In the vicinage of the hospital may be traced the ruins of the magazine (built of stone), blacksmith's shop, and other buildings; and further to the northward may be seen a small monumental obelisk, with an appropriate inscription, recording the melancholy fate of those persons who perished in the ill-fated Niger Expedition.

"The town of Clarence is erected on a clear and level area, greatly declining as it approaches the base of the chain of woodland hills that skirt it on the West. The plan of the town is that of a square, whose largest diameter exceeds three-quarters of a mile, from the lateral prolongation of the houses at irregular intervals. Two or three principal avenues pass from one common thoroughfare on the verge of the beach, and are intersected at right angles by a number of lesser streets, all of which are uniformly wide and spacious, but disgustingly dirty. The native dwellings, composed of pieces of wood roughly fashioned and put together, and roofed either with shingles or palm leaf mats, seldom rise above one story in elevation, except in a few instances, such as those of the more respectable inhabitants, and the government officers previously alluded to. They occupy in picturesque arrangement both sides of the street, the majority of them being whitewashed externally, which gives the whole an air of neatness and comfort. The greater portion of these habitations, however, are falling into a state of decay.

"To the southward of the town, half concealed by thickets and dense masses of foliage, is the burial ground of the colony. In it lie interred the remains of Richard Lander, Captain Bird Allen, R.N., Dr. Vogel, the celebrated botanist, and others, whose graves, with those of the inhabitants, are overspread by a luxurious carpet of grass and weeds. Behind the cemetery is Hay Brook, a rivulet of fresh water, highly extolled by the inhabitants for its excellent qualities, particularly for the cleansing of clothes and other domestic uses. On the western outskirts of the town is a congregation of mud hovels, termed Kru Town, from a number of stray Krumen making it their temporary home. From this suburb a road to the left leads through the woods to Cockburn Cove, a mile distant, into which a small running stream (Cockburn Brook) empties itself." †

On the East of Point William is a small bay, named *Goderich Bay* (Bahia del Nervion), three-quarters of a mile in extent, and indented by several little coves, in two of which are the mouths of rivulets, called *Hay Brook* and *Horton Brook* (Rio de San Nicolao). Between these brooks, to the distance of three-quarters of a mile inland, there is now cleared level land, on an elevation of between 100 and 200 feet above the sea; and westward of *Hay Brook*, between it and Cockburn Cove, is similar cleared land. The East point of Goderich Bay is *Point Goderich* (Pta. del Consul), which is low, and some rocks off it. Horton Cove is called by the Spaniards Ensenada de Gravina.

The East point of Horton Cove is *Point Horton* (Pta. Romey), rounded in form, rocky, and having some rocks at its foot. This is the West limits of a small clean cove (*Ensenada de Romey*), the eastern part of which is *Oyer Point* (Pta. de San Nicolao), beyond which is a rocky cove opening to the N.W., bearing the name of Ensenada de San Nicolao. *Bottlenose Point* (Pta. del Amirante), conspicuous from a large tree, bearing E. by S., *true*, 1 mile distant from Point William, bounds it on the East, and is 7 miles nearly West from Cape Horatio, the N.E. point of the island, the coast between being rocky, and with a great number of small coves. The coast is wooded and quite clear.

---

* Captain Kerhallet says, in his description of the place, that on the extremity of Point William (Punta Fernanda) is a large tree, to the East of which is the hospital; and farther on the lighthouse stands at 200 yards from the point. This lighthouse was established by the West African Company.

† *Dr. W. F.* Daniell, "Medical Topography," &c., pp. 144-148.

CAPE HORATIO terminates in a sharp point, near which are some rocks, one of which forms a tolerably large islet. The cape is high, very steep, and densely wooded. From it the East coast trends nearly in a straight line S. 28° W., *true*, to Cape Barrow (Cabo Agudo), the S.E. point of the island. This coast is rocky, abrupt, and broken by a large number of points, leaving between them small coves. At the foot of the cliffs there are numerous rocks visible. About midway between the two capes is a small rocky islet. *Seven Island* (Isleta de Caracas). It is high, but seen from the East; it is undistinguishable from the land, although half a mile off it. To the S.W. of this islet is a bay bestrewed with rocks and rocky islets in its entrance.

MELVILLE BAY (Ba. de Caracas) is 3 miles S.W. from Seven Islet. It is clear, but is very deep; there is 64 fathoms at 1½ miles from its East point. It is entirely open to winds from E. and S.E., which blow violently during the tornado season, and the bank off-shore is very narrow. For these reasons the East coast of the island is never frequented; the anchorages are bad, dangerous; any vessel caught here in a tornado is in the greatest peril.

CAPE BARROW (Cabo Agudo) is a high rocky point, surmounted by a small hill 2 miles inland. It is, like the rest of the island, densely wooded above the rocky cliffs. From this point to Cabo Redondo, the South coast trends W. 20° N., *true*, and has the same characteristics as the eastern side. It possesses no shelter against the very heavy sea frequently thrown in by the S.W. to S.E. winds. The land rises very abruptly to two peaks not far from the coast. *Cabo Agudo*, which is the true S.W. point of this island, is, like the rest of the cape, very steep, densely wooded, and with deep water close to it. *Cape Badgley*, according to the charts, is just to the northward of it.

GEORGE or WEST BAY is 9 miles N. 30° E., *true*, from the S.W. point. Its southern point is a slight projection of moderate height, called *Charles Folly* (Pta. San Carlos). From this the South shore of the bay runs directly East for 4¾ miles; it is very much broken and rocky. At the distance above mentioned there is an islet a cable's length offshore, but connected to it by a reef; and beyond this the coast forms a curve sweeping to the northward, the shore consisting of a sandy beach, but the dense woods of the plain behind it reaching nearly to the sea. Several brooks here fall into the sea, from which good water may be got; the best of these watercourses is in the northern part of this bay. *Point Cabras*, the North point of the bay, is rocky and irregular; seen from W.S.W. it terminates seaward in a gentle slope. It is 7¼ miles N. 58° E., *true*, from Charles Folly, which is the middle of George Bay. This bay is quite clear, the depths being from 30 to 35 fathoms in its opening, diminishing irregularly to 7 and 9 fathoms, mud or muddy sand, at a quarter of a mile from the head of the bay. In coming to this bay, it is best to approach it from the southward; Cape Badgley is the best point to make, on account of the N.E. current which sets along this shore. The bay is perfectly safe and sheltered from all winds; the only thing to be guarded against are the gusts which come from the high lands. Wood and water are easily procured. Should fresh provisions be desired, a gun fired once or twice will bring the natives to the vessel with the same sorts of stock as at Clarence Cove, barter being the mode of purchase. The bay is preferable to Clarence as an anchorage; it is easier of access, and is much larger. The seine may be easily drawn, and fish is very abundant. It is high water at 4ʰ; rise, 7 feet.

Goat Island (I. das Cabras), in lat. 3° 32′ 50″ N., lon. 8° 34′ 38″, is 1½ miles northward of Cabras Point. It is rocky and high. Between it and the point there is plenty of water. At a third of a mile East of this islet is another and smaller; and N.E. of this again a low rock surrounded by breakers; these are called *The Kids*. The coast at this point forms a small bay with an irregular sandy beach.

From this point to Cape Bullen (Co. Formosa), the West coast of the island consists of rocky cliffs. It is much broken, and in many parts has projecting rocky points, forming as many useless bays. One of these is 9 miles from Cape Bullen, the South point of which is called *Point Achada*. Between this and Goat Island the shore is clear, and has no rocks at the foot of the cliffs. One dangerous ledge alone exists, at 5½ miles N. by E., *true*, from Goat Island. There are two rocks on it whose tops are visible, called the *Boteler Rocks* (Rs. das Aves). The ledge lies North and South, two-thirds of a mile, but is narrow, leaving a clear passage between them and the coast.

CURRENTS.—From what has been said previously relating to the motion of the

In approaching Ilha do Principe, it is generally recommended to do so from the South, to avoid being drifted to leeward by the currents, which most often run to N.E. and N.N.E. at the rate of 1 or 1¼ miles an hour. This precaution is most necessary if going to the Bahia das Agulhas; or West Bay; but if bound for that of Santo Antonio, it is not of great consequence whether you round the island to the South or North, as there is no difficulty in fetching the bay from the latter. At 20 or 22 miles to westward of the island a large number of sea mews and other birds are generally met with. In hazy weather this fact is useful, as it is also during the night, when the passage of the ship disturbs them from their rest on the surface, and they rise and utter peculiar cries. (*M. Kerhallet*).

PONTA DA FLORA is the North and N.E. point of the island. It is rocky, and shows some abrupt cliffs. At rather less than 2 miles North of the point is a naked, blackish, ferruginous rock called the *Pedra da Galé* (or *Galha*), or *Bird Islet*. It is about 10 feet high, and by night is very dangerous, as it is very steep-to. Fish is very abundant near it. There is a clear channel inside it. The *Ilheo Bom-Bom*, to the East of the Ponta da Flora, is high, roundish, and covered with wood; it is clear: hence to *Ponta das Burras*, a distance of 2 miles, the coast is irregular, but there is anchorage off it. The point is high and rocky, but the breakers do not extend far off.

Ponta do Mosteiro (Monastery Point), the N.E. point of the island, is 1¼ miles S.E. of the former point; close to it is a black islet, called *Ilheo de Santa Anna*, and farther off, at 7 cables' length E. by N. of the point, is a cluster of black rocks connected with the point by a shoal. The largest of these rocks is called *Ilheo do Mosteiro*, and is about 25 or 30 feet high. It is very dangerous to pass between these rocks. On the same parallel, at a cable's length off, is a second islet, smaller and lower, called *Ilheo do Diamante*, in lat. 1° 40′ 42″ N., lon. 7° 27′ 54″ E., on which the sea breaks with great force. These islets should be passed to eastward not nearer than one-third of a mile, when the depths will be 30 fathoms; and when they bear South you must guard against the current, which sometimes sets strongly towards them. To the South the coast is entirely rocky, and lined with breakers. It forms a slender bay called *Ba. das Cabras*, the bottom throughout it is rocky. Its South extremity is *Ponta do Capitão*, which is clear and steep-to; it is the North point of the Bay of Santo Antonio.

SANTO ANTONIO BAY is the principal bay of Prince's Island, and is comprised between the last mentioned point and that of *Ponta da Garça* to the South, they being very nearly on the same meridian, and 2¼ miles apart. The shores of this bay are very rocky, and between the points are sandy coves, in which there is generally a quiet sea. There is an inner bay, which cannot be made out very well from the offing, and at the head of this is the town of Santo Antonio. The bay has the inconvenience of being exposed to East and S.E. winds, which blow during the tornadoes, but it has good holding ground. It is also somewhat difficult to penetrate, on account of the usual North and N.E. current, and the prevailing South and S.S.E. winds.

Ponta da Capitão, as before stated, is steep-to; it is a narrow tongue of moderately high land, and is the East point of a secondary bay called *Praya das Formigas*, which has a fine sandy beach. *Point Santa Anna*, which is the West point of this beach, is high and wooded, with low cliffs, on which formerly stood a small fort. Off this point, a cable's length distant, is a group of islands called *Os Roques*, the highest being 65 feet high, covered with bushes. At one-third of a mile S.W. by W. of this is an isolated rocky head, with 12½ feet water over it; it does not show, and, being 2 cables' length off shore, requires caution. On the summit of the hills above the bay to the West of this point, where the cliffs end, is a small chapel, that of Santa Anna. Beyond this the coast is high and wooded, but the rocks forming it will allow of landing in the small sandy coves between them. The North shore continues of the same character up to the town, before arriving at which, two large houses are seen; the first called *Casa Ferreira;* the second, Casa Gaetana, which is the residence of the governor. Landing is easy here at the pier or jetty constructed in front of it. Boats cannot go farther up the bay than this.

The CITY of SANTO ANTONIO, as it is magniloquently styled, extends across the head of the bay between two rivers, that of Dos Frades to N.W., and Do Papagaio to S.E. It stands on a low, marshy plain, over which the sea sometimes flows into the streets. It is sheltered by high hills, mountains covered with wood, and so damp, that the houses are compelled to be built on piles, the ground floor between which is the usual habitation of domestic animals. The houses are built of wood, of a wretched appearance, and often tumbling down in ruins. The town is tolerably regular, and reckons six churches. It may be easily imagined what the salubrity of the place is from its position, under a burning and humid climate. Yet the population returns do not warrant us to infer that the climate is very deadly to the residents.

From the Rio do Papagaio the South shore of the bay runs to the eastward, and is of the same appearance as the North side. At one-third of a mile from the town there is a watercourse flowing through a very deep valley, which furnishes excellent water. It is called the *Agoada dos Portuguezes.* Near it is a large house, called San João; and at four-tenths of a mile farther on is a second water course called the *Agoada dos Francesces*, also an excellent watering place. In general it is best to procure supplies from any of the brooks here at low water. Near the latter brook is the coaling depôt for the steam vessels of the French stationed on this coast of Africa.

From hence the coast trends to the North, a large projecting point called *Ponta do Demonio*, on which is a fort, mounting 10 or 12 guns, in which is a staff, carrying the Portuguese flag. This Fort da Mina has its walls whitewashed, and hence is easily made out. *Ponta Pequena* is high and wooded, as is the whole of the coast. Off it is a reef, a cable's length in extent. It is above half a mile from Ponta do Demonio, and is the West point of the bay of the same name, which is the best anchorage a vessel can take which draws above 13 feet, because it is sheltered from all winds. Its East point is called *Ponta do Risco* (Danger Point), so called from some projecting and covered rocks. The bay called *Praya Salgada*, to the East of this point, is deep, but the soundings do not show more than 4 to 13 fathoms water. There is a water current at the head of the bay in each angle, near each of which is a large house and a chapel. From *Ponta Abbada*, the East point of this bay, to Ponta Garça, a rocky projecting cape, covered with trees, the coast trends South and S.W. The latter cape is steep-to, and may be rounded closely.

Anchorage in the Bay of Santo Antonio may be taken with the flagstaff in the fort bearing S. by E., and the chapel of Santa Anna about N.E., in 5 fathoms, muddy bottom. This is the best sheltered spot, but it is close to shoaler water. It is high water in the bay at $3^h\ 45'$; the tides rise, at springs, 6½ feet, at ordinary times 5 feet 10 inches, and are very regular. The currents are not so, but the tidal streams in and out of the bay are weak.

The *eastern coast of the island*, southward of Ponta da Garça, forms a bay 4½ miles in extent, limited to the South by *Ponta da Mai.* The coast of it is formed of rocky cliffs, many of which show deep red patches. A little to the northward of its South end is the point of junction of the two ranges of mountains which extend across the island. Southward of this the coast, always rugged and high, extends to *Ponta do Pico Negro*, the South point of the island: it is a tongue of land, abrupt on all sides, with rocky cliffs, and off its extremity is a sunken rock, which usually breaks. At 1¾ miles S.E. by S. ½ S. from it is a large islet, about 350 feet high, covered with bushes. It is of a singular form, and is called *O Caroço*, or on some charts *Ilheo Carocha* (the Mitre), by the English called the *Dutchmans Cap*, from its form resembling a hat of the 17th century. Seen from the S.E., it seems to join the land: it is very steep-to, and the channel within it is clear, and 30 fathoms deep, black sand.

The *South coast of the island*, between Ponta do Pico Negro and Ponta Grossa, forms three bays, separated by rocky points: the shores of each are very rocky, high, and wooded, and are commanded by the high peaks of the southern chain of the island. *Ponta Grossa*, the S.W. point of the island, is a high, rocky cape, formed by a hill called *Barriga Branca.* When viewed from the S.E., it shows two conical peaks close together, called *As Mamas* (the Paps). The point is clear and steep-to. *Ponta da Formiga* is 2¾ miles N.W. of Ponta Grassa; it is the South point of a small cove, with a sandy beach, but which does not afford any shelter.

Ponta das Agulhas is the western point of Prince's Island, and is also the S.W. limit of the West Bay, the safest and best on the island. The point is surmounted by a peak called *Focinha de Cao* (Dog's Snout), which stands S.E., three-quarters of a mile from the point. From this the point slopes gently down to the sea, and terminates in a large rocky islet, called *Pedra das Agulhas.*

WEST BAY, or BAHIA DAS AGULHAS, which is bounded to the N.E. by Ponta Pedrinha, distant from Ponta das Agulhas 3 miles to N.E. by E. ¼ E., is 1½ miles deep within this line. When seen from the West, this bay is very remarkable. In the foreground appear five points, which are like five conical islets, as the low land behind them does not show at first; behind these are the Bico do Papagaio, the Charotte, and O Pico; and to the right the peaked rock called Pedra das Agulhas, so that it well deserves the name of Bahia das Agulhas (the bay of needle shaped peaks). It is sheltered from S.W. winds, and also perfectly so from the S.E. winds of the tornado season. It is clear of all danger, and the depths diminish gradually from 27 fathoms in its opening to 16 fathoms, sandy mud, a little to the East of Ponta das Agulhas.

The land at the bottom of the bay is low, and formed by hills separated by vallies, through which flow a great number of brooks, which furnish excellent water; one of the best of these is to the West of Roca Ferreira, a large house on a hill a little to the East of Pta. das Agulhas.

The English have a coal depôt in this bay, for their steam vessels on the African station, employed in the suppression of the slave trade. It is high water in the bay, at full and change, at 3^h 37′; the tides rise 5 feet 10 inches. Tempests frequently occur, in which, at times, the wind blows from the N.W., when it is necessary to look to the moorings; but in general there is no danger. The high lands attract rain; and it frequently happens here, as at the Bay of Santo Antonio, that it rains heavily and for a long time on the land, without a drop falling on the shipping afloat.

Ponta Pedrinha, in lat. 1° 38′ 20″ N., lon. 7° 21′ 47″, falls into the sea in a rocky cliff; it is surmounted by a hill, the termination of the central chain. To the North of the point is a small bay with a sandy beach, the North point of which is worn through by the sea, and called *Ponta Furada* (pierced point). Beyond this the coast, still rocky, forms another bay, bounded by *Ponta do Broa Pequena* (Point of the Small Loaf), which is 1½ miles North of the Furada. The coast throughout is clear, and with depths of 9 to 12 fathoms almost touching the shore. *Ponta da Mai-Martha*, two-thirds of a mile North of the former, is the West point of a tolerably large bay, of which Ponta Flora is the East limit. It is clear of danger, and has good and safe anchorage; the only drawback being that common to all the bays of the island, that of gusts of wind and calms, caused by the mountains. At the bottom of the bay Mai-Martha is a house surrounded by some huts and numerous streams.

The PEDRAS TINHOSAS (scurfy rocks), or OS FRADES (the Brothers), are two conspicuous islets to the South of I. do Principe. The largest and highest, which is about 130 feet in elevation, lies 15 miles S.S.W. ¾ W. (S. 9° W., *true*) from Pta. das Agulhas. The other, which bears S. 13° W., *true*, 13 miles from the same point, is also high. They are covered with bushes on their summit. The large isles show two paps when seen from East or West, and the smaller one is of a square form, and at its S.W. side is a large detached rock. They are both marked with white patches, caused by the dung of the sea birds. They are connected with I. do Principe by a bank of soundings, which is narrow at its South end, but widens to northward; the depths on it are considerable, from 30 to 50 fathoms, gravel, sand, and in some places rocky bottom.

Captain Fishbourne gives the following observations on Prince's Island, which he visited in December, 1841:—On leaving Clarence Cove (Fernando Po) for Isle Prince, or the South, you are recommended to steer to the eastward, leaving the islands to the West of you, but without sufficient reason. Although you avoid the current, you have to run to leeward a greater distance than the current could have carried you, and all which distance is to be made good against the current. If you are bound out of the Bight, or to any of the islands, in steering for North-West Bay, Isle Prince, where we were bound to, allowance must be made for the easterly set of the current. A sailing vessel making it to the southward of E.S.E. had better stand on all night, or till she could weather the island, thus passing to the southward of it; but it should not, except under most favourable circumstances, pass between the Dutchman's Cap and Isle Prince, as the winds there are baffling and currents variable. In this way she may arrive early on the following day. I have known a vessel to have been three days beating up on the North side, which will surely obtain if the master or captain is timid, as he will lose at night his daylight labour. The South side of the bay is to be avoided, as the ground is foul, till you get into 14 fathoms, where there is good anchorage, freest from rain, but at a long and inconvenient distance from the watering place. Vessels may go into 8 fathoms without apprehension, bringing Madame Ferreira's house to bear about E.S.E. (East, *true*.)

This lady is of considerable notoriety amongst the African squadron for her hospitality, and her house is easily distinguished, standing on a hill, and being the only one of any size. She supplies the squadron with firewood at two dollars the hundred pieces, 2 feet long by 4½ inches square; and as she thus clears the ground, plants it with sugar canes. She has lately erected sugar and timber mills to be driven by water, at an expense of 10,000 dollars; and though these, and all her supplies, are from France, the Local Junta are jealous of her English intimacy, and will, I fear, prevent her realizing the benefits which her enterprise deserves.—(The works are stated to be abandoned.)

The water here is excellent, and easily obtained in any quantity. The wood is plentiful, but the dark coloured of great specific gravity is entirely to be preferred. Beef may be obtained at Port St. Antonio, or from Madame Ferreira; at times pigs, and poultry, but not in quantity. Guavas, sour-sops, papaus, limes, oranges, bananas, pines, and cocoanuts are to be had here, but yams and sweet potatoes are very scarce; coffee is plentiful, and of excellent quality, 5d. per lb.; cacao bean is good and cheap here.*

A detailed account of the history and capabilities of this island, which, it may be supposed, exhausts the subject, will be found in the work before quoted, by José Joaquim Lopes de Lima (Ensaios sôbre a statistica, &c.), in which all previous notices are incorporated and quoted. With an extract from that work we conclude:—"This island has no internal trade, as it has but one town; neither has it any practicable roads, beyond the Serra do Papagaio and the mountain Dos Picos, and up to these they are rather tracks than paths. The language spoken is the same mixed dialect, *Luso-Ethiope*, as is used at San Thomé, but differently accentuated, and more copious in the African words. The men of the better class are well educated, affable, courteous, and hospitable, speaking and writing Portuguese purely, and some of them acquainted with other European languages. The ladies also understand, read, and write Portuguese. The lower orders are rude, superstitious, and most indolent; they cordially detest their compatriots of San Thomé, who in turn look upon them with equal aversion."†

ISLAND OF SAN THOME', OR ST. THOMAS.

The Island of San Thomé is another Portuguese possession. It is very much larger than the Ilha do Principe, and of greater commercial importance; but it is less useful in a nautical view, on account of its want of harbours.

The date of its discovery, like that of the preceding island, is now lost in some obscurity, as has been before stated; but the great probability is that it was first seen by João de Santarem and Pero de Escobar, two noble Portuguese, who had Martinho Fernandez (of Lisbon) and Alvaro Esteves (of Lagos) as pilots. After discovering Cape Lopo Gonçalves (Cape Lopez), they saw this island on December 21, 1470 (the feast of St. Thomas). As in the former description, we have drawn our information from the work of J. J. Lopes de Lima, where a full and interesting account of all the particulars of this island will be found.‡ It was first colonised by João de Paiva, in virtue of a warrant from King João II., dated September 24, 1485, which gave large privileges, and these were afterwards extended. Fostered by royal care, this island became the chief emporium of Portuguese colonial commerce; and cultivation, roads, villages, and public walks added very greatly to the prosperity of its mercantile interests. Its chief productions were indigo, sugar, and coffee. In the statistical work mentioned, the progress of this commerce, and the means by which it was fostered, are related, the information being chiefly drawn from the historian, Torre de Tombo. One cause of the decline of the prosperity of this island was the aggression of a body of *Angolares* (negroes of Angola), which had been wrecked in a slave ship on the Sete Pedras, and had lived and increased in the bush, and in the year 1574 made an attack on the unsuspecting inhabitants. The town of S. Thomé was burnt in 1585; and the bush warfare was kept up against them, but they were not completely subdued till near a century afterwards. A chain of troubles, among which the attacks by pirates at different times, and the European war, brought this island, from its once prosperous condition, to a state of ruin. But one of the chief causes of the desolation of San Thomé was the discovery and colonisation of Brazil, the superior climate of which, combined with its immunity from the troubles just named, and its vast extent, soon attracted all the colonists of San Thomé thither, and it is now left a wilderness.

---

* *Nautical Magazine*, Feb., 1843, p. 86.

† Ensaio sobre a statistica, &c., livro ii., part. ii., p 35.

‡ Ibid., livro ii., part. ii., capitulo i.

The Island of San Thomé is divided into eight freguezias, or parishes, two of which are in the town or city; these contained, in 1844, 1,432 fire hearths; of the population, 33 men and 14 women were white or mulattoes, but of these 47, 20 were less than thirty years old, and none above sixty: they all lived in the town of San Thomé. Of free negroes, 2,851 men, 3,081 women; together, 5,932. Of slaves, 1,051 men, 1,139 women; together, 2,190: making a total of 8,169 inhabitants.

The Island of San Thomé is nearly all mountainous. In its central and western parts is a very high peak, called *Pico do San Thomé*, covered with a very dense mass of trees. Its peak is frequently covered with snow, and is 7,005 feet above the level of the sea. At 3 miles East of this is the peak of *Anna de Chaves*, 6,913 feet high, according to the estimate of Captain De Langle. A little to the North of this is another, equally high. From this central mass two chains diverge, one towards the East to the Bay of Mecia Alves, and the other to S.E., having, among other peaks, those of *Maria Fernandez* and that of *Mocondom*, the last being close to the shore. From these last mountains the chain trends to the S.W., terminating in the pointed peaks of *Cão Grande* and *Cão Pequena*. The North point of the island is an extensive plain, watered by a multitude of rivulets.

The island, seen from the N.N.E. at a distance of 60 miles, shows as three very conspicuous mountains; Pico do San Thomé, the summit of which is almost hidden by clouds; the Cão Grande, with its needle-shaped peak; and Maria Fernandez, the top of which is in the form of a sugar-loaf. The island is 25 miles long from North to South, and its greatest breadth, East and West, is 18 miles. It is 80 miles S. 33° W., *true*, from the Ilha do Principe, and this is also the general direction of the island itself. It possesses one of the most fertile soils that can be imagined, but labour is wanting for its cultivation. Its chief products for exportation are coffee and cacao. The same description of fresh provisions and refreshments may be got here as at I. do Principe. The chief town is San Thomé, in the Bay of Anna de Chaves, on the N.E. part of the island, the name of the bay being frequently confused with that of the city. This bay, and that of Santa Catharina in the S.W. part, are the only good anchorages for vessels of any burden.

The following view of St. Thomas's Island, 8 or 9 miles distant, was taken by Captain Sir George Young, and is presumed to be correct. The summit of the peak is generally covered with a cloud that appears like smoke.

PONTA DO FIGO is the N.W. point of the island. It is high, peaked, and cliffy. At 1½ miles East of it is *Ponta Carregada*, low at its extremity, and surmounted by a conical hillock, called *Morro Carregado.* There are rocks extending off these points, some of which cover at high water. *Ponta d'Agoa Ambo* is 1½ miles East, *true*, from the former point. (On the Portuguese chart the point is called Morro Peixe, while that so called by M. Kerhallet is without any name.) The shore between them is broken, and consists of black rocks. From this last point the coast trends S.E. to *Ponta do Peixe* (or *Ponta do Fernao Dias*), a rocky projecting cape, on which stands the *Morro do Peixe* and the chapel of *San Francisco.* It is a good mark for the anchorage of Das Cabras, or Man-of-War Road.

The ILHEO DAS CABRAS is in lat. 0° 24′ 10″ N., lon. 6° 41′ 31″ E., at 1¼ miles due East from Pta. do Peixe. It consists of two hummocks on a low land. It may be seen at 16 or 18 miles off. Man-of-War Road, or the *anchorage of Das Cabras*, lies between Ponta Carregada, to the West, and Ponta do Peixe, to the East. It is easily taken, and the depths are 30 fathoms at 2 miles off-shore, within which the depth declines rapidly. The northern coast of San Thomé is very pleasant in appearance, as is also the eastern side. A rich verdure covers the hills, and groups of fine trees are scattered over the plains. From the anchorage above indicated a remarkable hill will bear S.W. by W.; it is crowned with a clump of trees, and resembles a helmet or casque, and hence is called *O Capacete.*

MAN-OF-WAR ROAD, on the N.E. side of the island, is a fine spot for small vessels, but large ships are obliged to lie out in the open road, in from 10 to 18 fathoms, where there is good ground and smooth water; though it is dangerous lying there in the season of the tornadoes, as they prevail from the N.E. directly upon the shore.

It appears, from the Journal of Sir George Young, that being at Badagry, and observing in the evening a tornado coming on, they ran up as far as Whydah, and thence upon a stretch to St. Thomas's. The island was made in eight days, but four or five days more elapsed in getting round to the bay.

The marks for anchoring in Man-of-War Road are, Ilheo das Cabras, or Goat Isle, making like a saddle, and bearing S.E. ¼ S.; San Francisco (or Misericordia Chapel), seated on a hill, on with a black rock upon the shore, and bearing S. by W.; the white mansion house upon the shore, called Fernandilla house,[*] S.W. ¼ W. From the latter, the watering place is only a quarter of a mile to the eastward.

The watering is very easy here, from a fine, small, rapid river, called the *Rio do Ouro*, that vents itself into the sea, and which is a great deal better than the river at the town, where the women are for ever washing with nasty, stinking palm oil soap. Plenty of wood is also to be obtained here. It is better to land, for watering, a little to the West of the river, as there is a strong surf on its bar.

Man-of-War Road is a preferable anchorage to that of Anna de Chaves, particularly in the tornado season; as the winds, which blow directly into the latter bay, lead clear out to sea from the former.

The water also is not only much better in the former, but is more easily obtained. Beef and other refreshments, except what may be brought on board by the canoes, must however be sent for to Anna de Chaves, the market place here being well and reasonably supplied with tropical fruits, vegetables, eggs, fish, poultry, pigs, goats, and cattle.

Close to the landing place at Man-of-War Road is the large stone mansion belonging to the extensive estate of Fernandilla; and at a short distance inland, on the summit of an eminence of no great elevation, is a well built brick church, that of S. Francisco, before mentioned.

Ponta de Diogo Nunes, or, as it is called by M. Kerhallet, *Pta. de Vasconcellos*, is 2¼ miles S.E. by S. ¼ S. from Ponta do Peixe, as it is termed by the latter. Pta. de Diogo Nunes is low, and not easily made out when bearing West; to the northward of it a small river, *Ribeira de Diogo Nunes*, enters the sea. To the southward of the point is a small bay, called *Praya Lagarto*, or *Bahia de Vasconcellos*, from the name of the navigator said to have discovered the island; its shore is sandy, but it can only be used by small vessels. A small river, the *Rio de Melo*, enters its southern corner.

ANNA DE CHAVES BAY.—This, which is frequently but erroneously called the Bay of Santa Anna, lies between *Ponta de Anna de Chaves*[†] and that of San Sebastião, which bear from each other E.S.E. and W.N.W., 1⅒ miles apart. Both these points are rocky, and that of San Sebastião is very low. To the West of the points a fine beach of white sand, perfectly regular, surrounds the bay, at the bottom of which stands the chief town of the island, called the *Cidade de Saõ Thomé*, and not *Santa Anna*, as it is erroneously called. This bay is perfectly free from all danger, and although it is open to North and N.E. winds, it offers (but only to small vessels) a safe and commodious anchorage; those which draw above 10 feet cannot enter sufficiently within the points to be quite sheltered, and are consequently forced to remain outside. The bottom, nevertheless, is excellent throughout.

A bank extends off the N.E. part of the island, the limits of which are nearly marked by the I. das Cabras, as the edge of it, in 5 fathoms, is half a mile East of it. From this point its edge trends about S. ¾ W., so that it meets the shore at Pta. Saõ Sebastião, the South point of the bay. It is called the *Bank of Santa Anna*, and on it the depth varies from 2 to 6 fathoms, sand and shells. This is not the only bank which requires caution by large ships coming from the North to Anna de Chaves, or from South to Man-of-War Road. There are two others, one of considerable extent, called the *Bank de Chaves*, with 6 fathoms on it; it does not show. It may be passed half a mile to southward by keeping Fort San José to West. The other bank is called *B. do Pescador*, and

---

[*] From the results of a great number of observations in May, 1822, Captain (since Colonel) Sabine has given the position of Fernandilla house, lat. 0° 24′ 41″ N., lon. 6° 44′ 43″; and hence the roadstead of Sta. Anna has been given in the longitude of 6° 49′ 13″.

[†] This point is sometimes called O'que d'El Rey, Monte d'El Rei, or Cabo Verde.

Ponta Preta (Black Point), or *Ponta do Ilheo Grande*, is 1¾ miles S.W. ¼ S. of the former, and is the West point of a narrow but deep bay, called *Bahia de Pramanga*, which, being open to the S.E. winds, is only used by small coasters of the island. *Ponta Pramanga*, its S.W. point, is a large rocky point, with a hill on it close to the sea. Above the cliffs is a flat-topped hill, on which stands the village of *Santa Catharina*.

As Sete Pedras (the Seven Stones), a reef about half a mile in diameter, lies 3¾ miles E.S.E. of Ponta Preta. The largest and highest of these rocks are in the centre of the group, which by day is not dangerous, but by night requiring great caution, as it is very steep-to. It stands very near the edge of the bank of soundings. The passage between them and the coast varies in depth from 32 to 30 fathoms.

PONTA DA BALEA.—The South point of the island, 1½ miles from the former point, is in lat. 0° 0′ 45″ N., lon. 6° 29′ 42″ E., according to M. Kerhallet. It is pointed, rocky, and surmounted by a small conical peak. The variation here is 20° 14′ W.

The ILHEO DAS ROLAS is the largest of those surrounding São Thomé, being 1⅒ miles from N.E. to S.W., and nine-tenths of a mile from N.W. to S.E. It is high, covered with large trees, among which are some cocoanuts, and has at its North part a small conical hill. Seen from a distance, it shews as two islets. The island is remarkably placed, as the Equator crosses its North end. The only landing is on the North side, in a valley, near which are two springs, which are connected with the sea in some way, as they ebb and flow with the tide. The island is, or was, inhabited by a single individual, and poultry, pigs, and goats, may be got. A vast number of turtle doves (*rolas*) live in the woods, and give name to the island. The channel between it and the coast is safe, and from 7 to 10 fathoms.

There is good anchorage in this channel to the N.W. of the Ilheo das Rolas, in 5¼ to 4½ fathoms, with the summit bearing S.E. at two-thirds of a mile distance, and here is shelter against the S.E. winds during the tornadoes. In any case, should the vessel drive, she can get out to sea; but the anchorage is not good for South and S.W. winds, which generally make a heavy swell.*

The Bay of *Santa Catharina*, which lies to the North and West of Ponta de la Baleá, and is a curve 2 miles in extent, is named from the village. There is no fresh water in the bay. The North point of it is called by M. Kerhallet *Santa Catharina*; by Sen. de Lima, *Ponta do Homem da Capa*, and consists of high cliffs. At a mile to the West of it, according to the latter authority, is a reef called *Balza do Flamengo*. The *Ilheo Macáco* (Monkey Island), a high rock close to the shore, is 2½ miles northward, and lies in a line with the two peaks of Cão Grande and Cão Pequeno. There are two other peaks above the cliffs, called *Pico da Praya Lança*, and *Pico da Preta*. Near the island are some fishermen's huts. The bay to the southward of it is called *Praya Grande do Calaboyo*, and that to the northward *Praya da Preta*, or *Praya Lança*.

Ponta Gabado, 4½ miles North of Macáco Island, is formed of cliffs, and is remarkable for three rocky islets, equally high, near it. The S.W. and largest is called *Ilheo de S. Miguel*; that to S.E. is *Ilheo Gabado*; and the North is *Ilheo Formoso*; the two largest are covered with bushes. The *Morro de Souza*, a small hill standing above the sea, is 2½ miles North of Ilheo Formoso, and is recognisable also by a small, low, rocky island, *Ilheo de Joanna de Sauza*, close to the coast. A reef is marked on the Portuguese charts as extending southward from the Point. *Ilheo Venangelo* is three-quarters of a mile beyond the last island, and high and wedge-shaped. *Ilheo Coco* is 1½ miles from the Morro de Souza.

PONTA FURADA, formed of low perpendicular cliffs, pierced by the sea, is the West point of the island. According to M. Kerhallet, it is in lat. 0° 13′ 50″ N., lon. 6° 25′ 49″ E. *Ponta Alemão* is 3 miles beyond this to the northward, and is the South limit of a shallow bay called *Enseada de Santa Catharina*, the North limit of which is *Ponta Diogo Vas*,

---

* *Captain Fishbourne* says, "The anchorage between Ilha das Rolas and St. Thomas, in 6 fathoms, where we stopped after leaving Anna de Chaves, is well sheltered and convenient for wooding; but water can alone be got from Isle St. Thomas opposite, and there in any quantity and very good. We obtained a small supply of pigs, poultry, turtle, and fish, every day. The officers succeeded in shooting a considerable number of wood pigeons and doves, which proved a grateful addition to the sick men's mess.

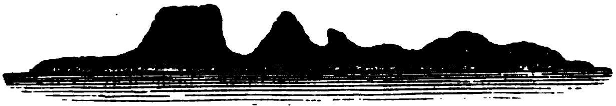
"The Bay opposite, in St. Thomas's, is far from being a desirable anchòrage; even a steamer, *without coal*, will find a difficulty in coming out at times; green wood giving a very *insufficient quantity of steam* to make head against the cross sea which generally prevails here."

3 miles beyond. The coast here rises rapidly towards the *Pico de São Thomé* and the central chain of the island. From the last named point to Ponta Figo, the N.W. point of S. Thomé, the only projections noticeable are *Ponta da Prainha* and *Ponta Cadão*, which project slightly beyond the line of coast.

The whole of the West coast has been but little examined or frequented, and ought to be avoided, especially during calms. It has very few inhabitants.

ANNO BONA.

ANNO BONA, or ANNO BOM, is a beautiful little island, in lat. 1° 25′ S., lon. 5° 36′ E. It is inhabited wholly by blacks, who formerly considered themselves subjects of Portugal, but the island is now claimed as a possession of Spain. The island is of a conical form; and around the base, next the sea, is a narrow margin, about a quarter of a mile in breadth, which is covered with groves of cocoanut and plantain: the cone itself is beautifully wooded to the summit. The natives appear simple and inoffensive, and obtain their subsistence chiefly from the sea. The town is prettily situated, on the margin of an open bay on the N.E. side, in a grove of cocoanut trees, and may contain 400 or 500 inhabitants.



Anno Bona, W.S.W. 12 leagues, as seen by Captain James Wallace Monteath.

The island was probably first discovered by João de Santarem and Pero de Escobar on Jan. 1, 1471, and was named Anno Bom, or *Good Year* Island, from being first descried on a New Year's Day. Its central land is so high, that it may be seen, in clear weather, at the distance of 10 or 12 leagues; and its shores may be approached with safety, in any direction, so near as a mile. Its base, where it emerges from the sea, is about 30 miles in circumference; from which the land rises, in varied and picturesque forms, to a considerable elevation in the central parts of the island, nearly the whole of which is covered with orange and lime trees; and on the summit of the sugar-loaf mountain there is a pond of fresh water. The anchoring place is on the N.E. side of the island, where there is a town near to the shore, defended by a small intrenchment of stones: abreast of which, and about half or three-quarters of a mile from the beach, there is from 10 to 15 fathoms of water, good sandy holding ground, very smooth riding, and a convenient landing place. Off the S.E. point of the island, and at a good distance from the shore, is a small island or rock in the form of a sugar loaf; between which and the land there is a good passage for ships; and near the shore, approaching the anchoring place, are seen seven rocks above water, which should be carefully avoided, as also a sandbank to the northward of the town. On the S.E. side of the island there is good fresh water, which runs down the mountain through a valley of orange trees; but the watering is rendered somewhat difficult by stones and breakers.

The wind, about the island, blows with a moderate force, and little variation, from the South and S.W. quarter, throughout the year; so that, as ships lie there under shelter of the land, they ride at anchor exceedingly easy and safe, and the navigator has little or no danger to apprehend from wind and weather, excepting about the months of March and September, when tornadoes, or strong gusts of wind from the eastward, prevail at times over the general sea breeze, and blow direct into the anchorage; but, fortunately, the previous gloominess of the horizon to the eastward, and the heavy thunder and lightning by which they are preceded always give timely notice to those who have not the ground tackling requisite for riding them out, to get under sail, and withstand their fury in the offing.

In point of salubrity to European visitants, this island could scarcely fail of proving superior to any of our settlements on the western coast of Africa, and it is much better suited to the constitution of Europeans than the climate of any other African island, situated within the tropics, and at a shorter distance from the continent. It is situated far out of the reach of those pestilential vapours and excessive heavy dews and rains which are so prevalent, and so fatal to Europeans, on the coast of the continent; and it does not contain any marshy land, nor stagnant waters, within its shores.

The island produces plenty of wood, suitable for firing, and is well supplied with pure fresh water, which flows into the sea at a short distance from the anchorage, to the S E.; and ships may soon procure a supply, either by means of their own boats and people, or by employing the canoes of the natives. It also produces plenty of refreshments, and very cheap; there are cows, sheep, goats, fowls, and many hogs; together with sugar-canes, plantains, bananas, pineapples, cocoanuts, pomegranates, oranges, limes, tamarinds, yams, and cassada. But oranges are the fruit with which the island most abounds; the quantity of them is incredible, and they may be obtained all the year round; they are full of juice, and of an exquisite flavour. A little cotton likewise grows on the island, which is sent to Portugal. By properly encouraging the natives, they might doubtless be very soon brought to supply any quantity of those and other refreshments that ships might need; and should anything else be required, such as bullocks, rice, Indian corn, calavancies, and yams, or even ship timber and lumber, the island could be readily and abundantly stocked from the neighbouring continent.

There are about 2,000 inhabitants on the island, who are a mixture of Portuguese and African negroes; the latter people are said to be the descendants of a cargo of negro slaves, that were shipwrecked there on their passage to Brasil. They are, on the whole, a stout, hardy, active, and half civilized people, capable of becoming, under a liberal establishment, industrious, useful, and orderly subjects. Even in their present state of degradation and wretchedness, they may be found extremely useful to ships touching here; for besides fetching them wood and water, should any ship be in distress, through sickness or mortality of her crew, assistance from these people may be obtained on very reasonable terms; and many of them are not only tolerably good seamen, but also capable of great improvement in that capacity; this has, indeed, been often experienced by our Guinea-men.*

To those commanders who have visited Anno Bona, or been in the practice of trading to the coast of Africa, no instructions are here required for their government at the island; but it may be necessary to acquaint others, who are strangers there, that under the present circumstances of the inhabitants they do not require money for any of the refreshments or necessaries they can supply, nor are there any established customs payable to them for anchorage or water. Seamen's clothing, coarse woollen and cotton cloths, pocket handkerchiefs, hats and worsted caps, hardware and earthenware, gunpowder, spirits, leaf tobacco and pipes, also salt, and even any sorts of old clothes, are much more acceptable to them than either gold or silver; and an assortment of these articles, to the amount of £5 or £10, will be sufficient with good humour, ingenuity, and dexterous management, to purchase as much live stock, poultry, fruit, and vegetables, as any of our ships might need. Though there is no duty claimed for anchorage or water, it is customary to make a present to the governor of a few of the above mentioned articles, as also to the priest, and to him who acts as linguist or tradesman.†

The governor of the island is a native. He comes off to shipping in great state, seated in a chair, with an umbrella over his head, and desirous of a salute, which he seldom receives; his principal object being to obtain the presents, which may thus be considered as the port dues of the place.

---

* In a respectable work already quoted it has lately been stated that deadly fevers are, at times, experienced at Anno Bona; that the anchorage is extremely dangerous; its productions of a common and degenerate kind, and not abundant; and its inhabitants a most wretched people. Preceding descriptions of the island may have been overcharged in one way; but we are assured, by a respectable commander acquainted with the island, that this description is not less so in another. The bank is certainly narrow, and caution in anchoring is required; but, to an experienced seaman, it cannot be considered as dangerous. It is clear, at least, that an ample supply of limes, oranges, bananas, plantains, and other refreshments may be readily and cheaply obtained here.

† For additional information as to Anno Bona, see a "Description of the Island, showing its Eligibility and Importance as an Occasional Place of Resort, with an Appendix on the Causes and Prevention of Sickness and Mortality among Seamen employed in the African Trade;" by Elliot Arthy, Surgeon, London, 1820. This little work, price only 2s., is well entitled to the notice of our readers. Here it is said that ships, which may visit St. Thomas's or Prince's Islands, are required to pay 84 ackies, or the sum of £21 sterling. for custom and *harbour dues*; and a further duty of 10 per cent. on all goods that are landed. The air about *them, moreover*, is very injurious to strangers.

The island is 3½ miles long from North to South; its greatest breadth is 1⅝ miles, and its least breadth three-quarters of a mile. It is not irregular in its figure, but resembles Fernando Po in this respect. It is, in reality, but a mountain, which rises abruptly from the shore into three chief summits, the highest of which to the North, called the Peak *Do Fogo*, is 3,250 feet high. It is a truncated pyramid, the top being a narrow ledge, not more than 35 feet long, and wooded four-fifths of its height. At its foot, to the W.N.W., is a small, shallow lake.* At two-thirds of the length of the island from the North rises the Peak *Do Centro*, and a little to the South of it that of *Dos Sulcados* (furrows), so called from its appearance. Around the base of these mountains a narrow plain encircles the island, and is covered with cocoanuts and plantains. Otherwise, the island is thickly wooded throughout.

Point Esteves is the N.W. point of the island, and consists of rocky cliffs, which extend as far as *Pt. do Ilheo*, two-thirds of a mile to the N.E., and then commences a sandy shore, reaching to the North point of the island, *Pt. San Antonio*. From this to *Pyramid Point*, one-third of a mile S.E. by S., the beach is still sandy, and between them is the village of *San Antonio da Praia*, the capital of this island. It is built on the beach, amid a grove of cocoanut trees. The houses are miserable, small, and rudely constructed of rough hewn planks and mud. It contains 400 or 500 inhabitants. Pyramid Point is sandy, and is very remarkable by a large number of black rocks off it; one of these is very high, and gives name to the cape.

The directions for anchorage by Commander W. B. Oliver are as follows:—Open the low rocky point to the westward of Pyramid Rock, with the East end of the church (the eastern building detached from the village); you may then, by keeping Pyramid Rock on with a high rock over it, resembling a fort, steer in on that line, and carry sandy bottom from 19 to 3½ fathoms, within 2 cables' length of the beach, when Islet Point will bear W. ½ N., and the Pyramid Rock S.E. by S., and Turtle Island S.E. by E.

Ponta Pedrinha, a rocky cliff, is S.E. by S. ½ S. of the former; and at one-third of a mile S. by E. from it is *Pta. d'Agoa*, near which is a rivulet of very difficult access. At above a mile southward of this is an islet of very singular form, called *Ilheo Da Tartaruga*, or Turtle Island. It is in lat. 1° 24′ 18″ S., lon. 5° 38′ 10″ E.; var., 21° 18′ W.

All the West coast of Anno Bona is safe and steep-to, but affords no shelter to shipping.

The *Currents* around Anno Bona are very variable; nevertheless the island seems to lie in the Equatorial Current, which, to the West of the island, runs to W.N.W. with varying rate. In April and June it runs from 15, 17, to 24 miles in the twenty-four hours. To the South of the island they sometimes run to W.N.W.; at others, North and N.N.W., and even N.N.E. To the East of the island they are often running to North, N.N.E., and even N.E. Hence it may be said that, during calms, the anchorages of this island are difficult to make. To the North and West of Anno Bona the Equatorial Current is almost constant.

SECTION VIII.

THE COAST OF AFRICA, FROM CAPE LOPEZ TO THE CAPE OF GOOD HOPE, AND THENCE TO ALGOA BAY.

On page 18, the seasons, &c., of Congo are briefly described by Lieutenant Bold; and as every information is desirable on a coast so little known or frequented as that under consideration, the following observations, by Captain *H. J. Matson*, R.N., will be acceptable:—

Seasons.†—On the West coast of Africa, South of the Equator, the rains generally

---

* Description by the officers attached to Captain Owen's Expedition.

† Captain Ch. Ph. de Kerhallet says:—"One general remark to be made on the seasons of this portion of the coast is, that the more you advance southward the more backward they are.

"Every time the sun, in its alternate passage from one hemisphere to the other, is in the begin early in November, and continue until the middle of April. They are earlier on the coasts of Angola and Benguela, and later to the northward of Congo. To the southward of 10° S. there is occasionally not any rain whatever for several years; but sometimes in the months of November and December it falls in excessive quantities, and the country then becomes in parts almost inundated. There was not any rain near Benguela during the years 1840, 41, and 42; but the appearance of immense watercourses, in which were large trees that must have been carried by the torrents many miles from the interior, amply corroborate this statement.

About Kabenda and Malemba (lat. 5° 30′ S.) the rains are very heavy from the beginning of December until the middle of January. To the southward of 10° S. the months of January and February are very fine, but oppressively hot and sultry.

The months of March and April are the most unhealthy. This is owing to the exhalations from the earth after the heavy rains, which the light sea breezes are not sufficient to dispel.

From May to September are the most pleasant and healthy months; the sky at this time is generally overcast or cloudy: in the months of June, July, and August a thick fog (called the "smokes") prevails; it is not caused by exhalations, and is neither unwholesome nor unpleasant. Tornadoes occur in September and October; they generally blow from S.E., and are not nearly so violent as those to the northward of the Equator, nor are they usually accompanied with heavy rain.

Winds.—From Cape Voltas to Cape Negro the wind blows constantly from South, a double reefed topsail breeze. From Cape Negro to Salinas it continues to blow up the coast from S.S.W.; it becomes more moderate as you get to the northward, and when to the northward of Cape Mary it frequently blows from S.W. and W.S.W.

Between Salinas and the River Congo the prevailing winds are S.W. throughout the year. The sea breeze generally sets in about 1^h p.m. from W.S.W.; it gradually veers to the southward, and continues to blow from S.S.W. or South during greater part of the night, and becomes very light or calm before daylight. When within 10 or 15 miles of the shore, the land breeze will reach you, and continue sometimes from sunrise until 8^h or 9^h a.m.; but if 30 or 40 miles off-shore, you will generally have a calm from sunrise until noon. The sea breeze occasionally sets in from W.N.W. and N.W.; and this happens more frequently in the months of October, November, and December. During the "smokes" (in June, July, and August), the winds are very light, and blow from South and S.S.E. during the whole twenty-four hours.

At the distance of 80 or 100 miles off-shore, the S.W. winds become more regular; they gradually veer round to the southward and eastward, and imperceptibly unite with the S.E. trade. A line drawn from the Tropic of Capricorn, in lon. 5° East, to the meridian of Greenwich, in lat. 5° South, may be considered as the eastern limit of the S.E. trade.

From the River Congo to Cape Lopez the land and sea breezes are not so regular. From October to April the winds here are always constantly from S.S.W. and S.W.; and heavy squalls from S.W. and West occur in December and January. From May to September the land and sea breezes are more regular: the latter at this time often set in from W.N.W., and blow during the night from S.W. and S.S.W.; and then the land breeze is only felt close to shore.

Currents.—A current is almost constantly running up the coast of Africa from the Cape of Good Hope to the River Congo, at the average rate of 1 mile per hour. It is here met by the impetuous stream of that river, which runs with undeviating regularity to the N.W. and N.N.W. at the rate of from 2 to 4 miles in the hour, until it unites with the Equatorial current, 2° or 3° South of the Equator. The stream of the Congo is felt at the distance of 300 miles from its entrance, and may be known by the clayey appearance of its waters, which are of a yellowish olive green colour. From May to

---

zenith of a place, this period is generally that of the bad season, of rains, and squalls, and storms. In places near the Equator, these passages happening every six months, there may be reckoned two rainy seasons and two dry seasons; the former, when the sun is in the zenith of the place; the latter, when it is at its greatest distance from the Equator, North or South. But this rule is not to be considered absolute, for in the parts near the Equator what may be called the dry season is that in which the rains are not heavy or continual, and that in which you are subject to storms and tornadoes has its intervals of fine weather.

October the current occasionally runs to the southward, *close to the shore*, and continues to do so for forty-eight hours.

Rollers or *Caléma.*—A day or two after the new moon, in the months from May to September, a very heavy swell sometimes sets in along the whole coast from 3° to 15° South; this occurs more frequently during the smokes. It renders the open bays very dangerous to remain at anchor in where the water is very shallow. At this time it is nearly a calm, never more than a very light breeze; you can easily warp outside of the heavier rollers by a small hawser; or you may ride by a kedge anchor and hawser, when the chain cable would snap with jerks, caused by the sudden influx of a large body of water into the bay. During the period of caléma you cannot land on the coast, except in the surf boats.

BANK OF SOUNDINGS.*—From Cape Lopez, the boundary line of the bank of soundings, *i.e.*, where there are 55 fathoms (100 métres), gradually becomes more distant from the shore, as you go southward, as far as the right bank of the mouth of the River Congo. Off Cape Lopez it is about 8 or 10 miles out, and these deep soundings may be found close to the Cape and to the West of it.

Near the River Fernan Vas it extends much further, and attains a breadth of 25 or 28 miles, which it keeps as far as Point Sta. Catherina. From this point the line of soundings of 55 fathoms (100 métres) retreats from the coast; and on the parallel of Pt. Pedras it is 48 miles out.

The coast from Point Pedras runs to the S.E., and it seems that the boundary line of the bank runs parallel with it, until, off the Bay of Loango, 60 fathoms are found 50 or 55 miles out.

The prevailing nature of the bank is of mud near the shore, as far as 10 or 11 fathoms; farther out is found grey or muddy sand, sometimes sand and gravel, and sand mixed with coral. This last kind of bottom is found more in the neighbourhood of the River Congo.

It is only in some places, as near Point Pedras, that the bottom is rocky. The rocks are always a short distance from the coast, to which a good berth should always be given when you come upon this kind of bottom.

Throughout the whole extent of the bank of soundings the water shoals very gradually from the West towards the shore. We have stated elsewhere the law which seems to regulate this, and which renders the navigation safe. Vessels can generally coast along 2 miles from land without fear of danger. Moreover, you can anchor on it anywhere, in any depth you choose.

The previous remarks will readily suggest what course you should take when sailing along this coast from North to South. So that, except when it is setting to the S.W., you should invariably keep out at sea beyond the influence of the current, and not come near the shore, except to take advantage of the land breezes which begin to blow about sunrise, or a few hours before. In a word, you must shape your course just as in the case of the Senegambia coast, when running to the North in the fine season.

The land breezes are usually not very strong, and are not felt more than 20 or 25 miles out.

The tornadoes on the Loango Coast are not so violent as those in the Gulf of Biafra or the Gulf of Guinea. They are usually violent storms, during which the winds blow from the East or S.E., and then gradually losing their force, recommence blowing from S.W., turning by the South. But still there are sometimes hurricanes from the East and S.E. of considerable violence, which compel you to take in all sail. But these squalls and storms are invariably so long gathering in the East and S.E. that you have plenty of time to prepare for them.

It is about the parallel of the River Congo that these tornadoes cease to be felt.

After this the navigation of the Loango Coast is found not to be dangerous, and it is very easy when sailing from South to North: only, in making the bays on this coast, you should always keep clear of the S.W. headlands of these bays, which are almost all skirted by banks of black rocks, although the points themselves appear to be of sand, which is probably only a covering on the surface.

On the whole of the coast we have been describing, except in the bays where landing is very easy, communication with the land is very difficult, and frequently very dangerous and impracticable for small boats, on account of the heavy surf which breaks upon the beach. It is therefore very useful to have here, as well as North of the Equator, some canoes or boats on purpose to clear these breakers, manned by blacks accustomed to manage them.

---

* **Remarks by Captain *Ch. Ph. de Kerhallet*.**

On the Coast of Loango, as we have said, the alternations of the land and sea breezes are not very regular except during the months of May, June, July, August, and September. In the other months the prevalent breeze from West to South varies very little from this direction.

In the season of *the rollers*, and especially at the period of the syzigies, you should avoid anchoring in shoal water, or if you do, be prepared to get away from the land at the first indication of danger. The rollers announce themselves by considerable surf; the sea breaks on the headlands of the bays before you perceive any swell inside; and from the mast-head there may be seen large waves out at sea occasioned by them, which look like ridges on the surface of the water.

CAPE LOPEZ, or LOPO GONCALVES, the point of which is given as in lat. 0° 36′ S., lon. 8° 43′, has been described in the preceding section. Between this point and the outlet of the *River Mexias*, 7 leagues to the southward, the coast is altogether clean, and you may sail along it, without fear, in 7, 6, and 5 fathoms of water. The anchoring place, off the entrance of the River, is in 5, 4, and 3 fathoms; but you have to avoid a reef, which stretches from the South point, halfway over the channel. The river does not appear fit for ships.

From the *River Mexias* to that of *Fernan Vas** the course and distance are S. ¼ E. [*S.S.E. ¼ E.*] 22 miles. The coast continues low and clean, covered with trees, and along it you may proceed with safety. From the River *Fernan Vas* to *Camma River* the coast trends S. ½ E. [*S.S.E. ¼ E.*]

At the distance of 24 miles from the River Fernan Vas the coast forms a slight indentation or bay, called *Camma Bay*. Its North point is called Point Metoutou. It is 10 miles from the South point of the same bay, called *Point Sta. Catharina*. *Point Metoutou* is wooded, and projects very slightly beyond the coast line. At 2 miles North of it is seen the little *River Paradia;* and between this river and the point, but situated rather inland, is a clump of trees higher than those surrounding them. In Camma Bay the trees grow to the water's edge. There are several villages to be seen, the most important of which, named *Kinamina*, stands near the right bank of the River Camma. It was an active mart for the slave trade. The English and Hamburghers trade in the river.

Point Sta. Catharina, coming from the North, appears a clump of lofty trees, which look as if they were separated from the main land, and give the appearance of an island; coming towards it from the South, the shore looks craggy. Around the point there is a reef of rocks and sand, extending 3 miles towards the North, as far as the mouth of the River Camma, where there are 6 fathoms of water.

Some hills of slight elevation at the South of the point give the coast a bold apppearance. Above the beach the land rises gently, the belt of trees and the drowned lands disappear, and here and there are seen open spaces, which show some vegetation, and give the country, at a distance, a cultivated aspect. This is frequently the case on this coast as far as Cabenda.

From Point Sta. Catharina to Point Pedras the coast runs S. by E. ½ E., for a distance of 63 miles, with several slight indentations, in one of which, towards the West, is the mouth of the River Setté. It is low between these two points, with sometimes a narrow sandy beach, and sometimes covered with trees down to the water's edge. Between Point Sta. Catharina and the River Setté there are several watercourses, indicated by narrow cuttings in the belt of trees on the shore, principally to the North of the River Setté, near to which the sandy beach reappears. Some higher hills also begin to be seen inland, forming a chain parallel with the beach. And here, in clear weather, the land may be seen from the mast-head, when in 35 fathoms, or from about 18 or 20 miles from shore.

The RIVER SETTE is the northern boundary of the kingdom of Loango. It is a fine stream, with a depth of 3 fathoms at its entrance. The points at the mouth of it are about 1½ miles apart, and are low and covered with tall trees, as well as its banks, which renders it very difficult to distinguish the river. It runs at first in an easterly direction, and then E.N.E. The town of *Setté* is built 50 miles inland, on the right bank of the river; it is the capital of the territory of the same name, the inhabitants of which formerly carried on a considerable trade with the Portuguese in red wood and ivory.

---

* *The Fernan Vas is said to have a course of 50 miles long, through a territory called Gobbi.—Kerhallet.*

The entrance channel of the Setté is only two-thirds of a mile in width. It is formed by a wooded bank on the North, and on the South by a sand bank, which, after stretching westward for about a mile along the South side of the river, continues round the southern point at a short distance, and extends itself up the river. The course of the channel is very nearly N.E.; near its mouth the river separates into two streams, the one running to the North, the other, which is the principal one, towards the East; it is on the latter that the town of Setté is situated. It is said that this river deepens after passing the bar. There is a small conical wooded hill at the point where the river divides, which may also serve to distinguish it. The River Setté rises in the mountains of *Camplida*, and it is said to be 260 miles long.

From the River Setté the coast is low and woody for 15 miles; and then begins the chains of Santo Espirito hills, which are the best marks for recognizing the River Setté and Point Pedras, which latter is 9 miles South of these hills.

The *Santo Espirito hills* stand back some miles in the interior. They form two remarkable patches of table land covered with trees, flat at the top, and separated by a valley, at the bottom of which there appears to be a river running. "They are (says Mr. Woodville) beautifully ornamented with trees, and a vista in the middle." Pimentel describes them as two high mountains, flat at the top, which, lowering regularly on each side, unite equally with the ground. On the South side of these hills, some spots, apparently grassy, are seen, which, when you come near the coast, in 11 or 10 fathoms, appear quite barren. You ought not to come to an anchor, nor go nearer the shore than 9 or 8 fathoms, the bottom being full of sharp stones: so long as you find good ground, you may approach the land; but so soon as it becomes rocky, stand to seaward. There is great fishing on all this coast, chiefly for pargos or rocket fish.

Upon this coast, in general, the winds, during the fine weather, are from the S.W. These set in after noon, with land breezes from the N.E. early in the morning; but during the rains and winter months the winds are from the southward, with little or no land breeze. In the vicinity of the land the current runs with rapidity, and the coast, therefore, should be approached with due caution.

The shore is indented in many places between the Setté and Point Pedras by several streams.

The shore must not be approached in this part in soundings of less than 8 or 9 fathoms, which are found 3 miles off, as within that the bottom is very rocky, and many of them have sharp tops. When, however, a sandy bottom is found, the land may be neared; but as soon as it becomes rocky, it must be left. Close in-shore there is abundance of fish, and fishing is an usual resource of the crews.

To the South of the Santo Espirito hills there may be seen, when near the shore in soundings of 10 or 11 fathoms, some of those spacious clearances, of which we have already spoken, and which give to the country the appearance of being cultivated.

POINT PEDRAS is low, woody, and very difficult to make out, when seen from the West. It is more distinct from the South side, and projects about a mile beyond the line of coast. It forms the right bank of a river, the estuary of which runs from S.W. to N.E., and which soon after turns sharply round to the S.E., rounding the Santo Espirito hills on the South. Point Pedras is prolonged to the S.W. by a bank of rocks and sand, about 2 miles in extent, to which it probably owes its name. The Portuguese call it Cabo Primeiro.

From Point Pedras to Cape Yumba the coast runs to the S.E. by S. for 54 miles. Its appearance on leaving Point Pedras is very varied. It shows at its foot a narrow sandy beach, covered at its top with thick mangroves. This sandy beach is not visible 6 miles off. A lofty range of hills, with rounded summits, is seen some distance in the interior. In many places the coast appears in three ranges or levels. In the ports South of Point Pedras, the first level is formed of mangroves rising from the water's edge; the second, of tall trees, rather more inland; above which, the third, rise the heights before spoken of. Here and there some bare spaces, covered only with dry grass, make whitish spots amongst the verdure of the second range. But on nearing Cape

Yumba, the aspect of the coast is different. A white sandy beach forms the shore. From Point Pedras the coast rises gradually towards Cape Yumba, and the hills are close to the shore. The bank of soundings also increases in width. Seven or eight miles off there are 22 fathoms of water, with a bottom of muddy sand. In 36 fathoms the land is not visible, and the colour of the water indicates the bank of soundings. The coast is clean and steep-to, and may be approached within 2 miles without danger, in 7, 9, and 10 fathoms.

A little to the South of Point Pedras, among the trees which cover the shore, some houses or barracoons are seen, with various flags hoisted. A little further there are some more houses, with red and white striped flags, which are also places for trade.

Fifteen miles from Port Pedras there are two white spots on the inner range with those before mentioned. At 34 miles from Point Pedras the country inland appears hilly, and increasing in height as you proceed southward.

These hills may be seen 25 or 30 miles out at sea. The hills on the shore are a range which is formed from old sand dunes, the surface of which has become hardened by the alternate effects of heat and rain. Between these parallel ranges there are lakes and marshes, as also between the first range of hills and the shore in many places. At about 20 miles North of Cape Yumba is a very remarkable isolated conical mountain.

Cape Yumba.—Coming from the North, Cape Yumba may be recognized by three or four undulating or saddle-shaped hills, skirting the shore, and falling abruptly to the sea, to the very point of the cape, on which are some clusters of trees. They are called the *High Land of Yumba*. Five miles off the Cape there are 13 fathoms, bottom of sand and gravel.

At the foot of this high ground, which forms the cape, there is a rock or small islet joined to the land, to the South of which is a creek, in which you may land. To the South of Cape Yumba there is a river, which divides a short distance from its mouth, called the *Yumba River*. It waters the Yumba province of the kingdom of Loango. It is said to be 100 miles long.

Cape Yumba is the North point of Yumba Bay, the South point of which is called Point Matooti. Its foot is surrounded by a rocky bank, extending to the S.W. for about a mile.

Point Matooti, which the Portuguese call *Cabo Segundo*, lies 9 miles S. by E. ¼ E. of Cape Yumba. To the East of this point, which is low at its extremity, there is a hill covered with trees, at the foot of which the river *Matambi* runs parallel with the shore for several miles towards the South. Point Matooti is skirted on the N.W. by a ledge of rocks, above and under water, for about a mile. Those which are visible are rough black rocks, extending for half a mile N.W. from the Point.

YUMBA BAY.*—Between the points, 7½ or 8 miles apart, Yumba Bay describes a tolerably regular curve, with a fine sandy beach. Some hills line its inner part, rising from the inner shore; they are lofty, especially in the South, and well wooded.

The South side of the bay is formed by a tongue of low land, which begins from Point Matooti, and runs in a northerly direction for about 2 miles, then to the N.W. for a similar distance. The North shore of the bay runs about W.N.W. to Cape Yumba.

The extremity of this tongue of land, or peninsula, forms the point of the left bank of the mouth of a tolerably large river, named *Louziby*, which empties itself at the bottom of the Bay of Yumba, through a very narrow passage, barred by reefs, on which, at low water, there is not more than 8¾ feet of water. This river, which is very shallow, and has only 12 feet water in the large basin within its mouth, is said to have a course of 60 miles.

Into this basin, obstructed by banks and islands, the most remarkable of which are those of *Mavalaba* to the North, of *Great* and *Little Yatumba* to the South, there also runs in its North part the *River Comby*, on the right bank of which is a village of the same name; and in its South part the *River Matambi*, which runs parallel with the shore to the South. The best water is obtainable in the River Louziby. There are several villages on the coast, on the Yatumba Islands, and on the peninsula which encloses on the West side. On this peninsula are seen some Portuguese and Brasilian factories, and a large village near to Point Matooti.

---

* *Yumba* is the name of that part of the kingdom of Loango in which the bay is situated. *Ma-Yumba* signifies King of Yumba. Yumba Bay is called by the Portuguese *Alvaro-Martinho.*

The Bay of Yumba is safe, except at those points we have marked. In coming from the North it will be necessary to keep at least 2 miles to the S.W. of Cape Yumba; and in coming from the South keep 3 miles to the North of Point Matooti; but when once round the points, there is good anchorage all over the bay. The bottom is even, and shoals gently from the line of the two points.

Rather more than a mile from Point Matooti, to the N. ½ W., there is a small island, called *George Islet*, about half a mile from the bottom of the bay. It appears to join the reef, and stretches along the N.W. of Point Matooti. This islet is about one-third of a mile from North to South, and is very narrow from East to West. It is skirted on its North point by a bank, with breakers, which extends about one-tenth of a mile. To the West of the islet, and close to it, there are 7 fathoms; to the North, 6 or 7 fathoms; in the East, 6 fathoms; and the depth gradually decreases to the beach, near to which are 3 fathoms.

The best anchorage, because the quietest, is to the East of George Island, in 6 fathoms, hard mud. You should go a little round the North of the island to get to it; or else anchor off the North point of the island in 8 fathoms, one-third of a mile distant. It is high water, at full and change, at 4^h 35′; the rise is 6 ft. 10 in.

Ships can anchor on the line between Cape Yumba and Point Matooti, in soundings varying from 8 to 10 fathoms, brown sand.

There is good shelter in the Bay of Yumba from the S.S.E. and South winds, but not so good from the S.W., except at the anchorage in the East of the reef and islet of St. George, which break the sea, and render the swell, which generally prevails in the bay, less troublesome.

Trade is carried on in the bay in ivory, wax, *gum*, dye-woods, but chiefly in slaves. Abundance of fish is found in the bay, especially shellfish. These, with yams, form the chief food of the inhabitants, who are very wretched. The chief town is on the peninsula, and may contain 1,000 people. All the country around is thickly wooded and low, and the inhabitants very poor.

An officer of the *Barracouta*, before quoted, observes that Yumba is now in a wretched state of poverty and dilapidation. He says that the anchorage is *not* good, as a heavy swell sets in when the wind blows on shore, and there is then no shelter unless by lying close in upon the southern side of the bay, which, from many reasons, is not advisable.

The Bay of Yumba may be regarded as being on the limits of the great rains. To the South of it the vegetation is not so vigorous; parched lands begin to appear, and naked hills, with their summits scorched by the heat of the sun, are seen. The coast indeed presents evident marks of drought, more or less intense; and these signs become more and more distinct on advancing southward.

From Point Matooti to Point Banda, the first projecting land to be met with, the sandy coast increases gradually, and at the foot of it is covered with trees. The first line of hills rises a short distance inland, and after that two other ranges within rise one above the other.

A bank here skirts the sandy beach, extending half a mile off: 9 miles from Point Matooti, a small island or large black rock shows itself on the bank, about 2 miles from the shore, which in this place is very remarkable. The heights, which come down to the shore here, are rugged, with broken peaks, and of a whitish hue. The trees which cover them are of a round form. Some rocks appear at the base of the hills, on the tops of which are single trees with tall stems, and some shady palm trees crown the base parts. Further on are some high peaks, a good way inland; more to the South the land reappears in three undulating ranges.

From Matooti Point to Banda Point the distance is 39 miles. The bottom near the latter is thickly studded with rocks and coral reefs, which extend 4½ miles N.W. in 20 fathoms. There is plenty of fish here, but the anchorage is very bad, and the coast should not be approached, even by the lead, on account of the irregular rocks.

Banda Point, which is low, may be recognised by two lofty hills, back in the third range, the summits of which are called *Paps of Banda*, from their form.

From Point Banda to Point Kilongo the bearing and distance are S.S.E. 30 miles;

the shore between has all along its foot a thick belt of trees, and one or two ranges of hills some distance inland, but not so lofty as those before mentioned. Four rivers enter between these points; the most northerly of which appears to be the mouth of the *River Matambi*, which opens to the sea. We have already said that this river, emptying itself in the North into the basin of the River Louziby, situated at the bottom of Yumba Bay, ran parallel with the shore towards the South. The second river, the mouth of which is 14 miles from Banda, is called the Makanda. This river, with a village of the same name on its left bank, about 3 miles up, is the South boundary of the Yumba territory. Another small stream runs between the hills into the sea; and the fourth river is the *Kilongo*, 3 miles from Point Kilongo. It is said to be 30 miles long.

POINT KILONGO is the South point of the small bay or creek, in which the River Kilongo empties itself. This point is marked by a single hill with a flat top, situated on the left bank of the river's mouth, and by a reef which extends half a mile, which is the *Baxo do Indio* of Pimentel. There is tolerable anchorage in 4½ fathoms, reddish sand mixed with shells, to the North of the reef, in the cove which lies opposite the entrance of the river. The land adjacent is moderately high, with several whitish patches. North of Kilongo Creek there is a large lake and a lofty mountain, with a peak or nib on its summit. The village of Kilongo is 3 miles inland, on the left bank of the river, in a park like country.

From off the river Kilongo the depth appears to increase gradually from 7 fathoms at 3 miles, to 60 fathoms 40 miles out. The shore between Point Banda and Point Kilongo is clean, and may be passed at a distance of 3 miles, in 6 or 7 fathoms. The bottom in the offing is for the most part muddy.

From the Cove of Kilongo to the River Quiloo, or Killoo, the course is S.E. by S. [*S.E. by E.*] 31 miles. "The land to the southward of the cove," says Pimentel, "is tolerably even, with some hillocks and lofty trees farther in, which terminate at a pretty high mountain, called, by the negroes, Salomba. The coast, for the space of 4 leagues, appears white at a distance, with sandy downs, and has some palm trees. The bottom, along shore, is sand and stone, so that you ought not to approach the land nearer than 9 fathoms; this foul ground continues as far as the River Quiloo. On the North side of the entrance of the river are two small woody eminences, called, by some navigators, the *Paps*. You can land here in boats only, as a bank of stones and sand exists, on which are only 2 fathoms of water."

This part of the coast between Point Kilongo and the Killoo is not safe. The bottom is sand and rocks, and the shore must not be approached nearer than in 9 fathoms. Further out, in 11 or 12 fathoms, there is soft mud.

The RIVER KILLOO appears rather a large stream. It runs across a very flat country, towards the E.N.E., for 27 miles from its mouth. At this point it divides into two branches, the one running to the N.E., the other S.E. On the latter are the villages of *Kibota* on its right bank, and of *Bando* on the left. The entrance to the river appears to be barred by a reef of sand and rocks, on which there are only about 12 feet of water. It is not, therefore, practicable except for boats.

The South point of the mouth of the River Killoo is called Kisanga. It is wooded and rather elevated, as well as the North point, and may be considered as the North point of the Bay of Loango.

LOANGO BAY.—From Point Kisanga the coast, with a sandy beach, runs southward, curving in and out, for about 4 miles; then to the S.W., and forms the S.W. point of Loango Bay, called *Indian Point*. From Point Kisanga the coast rises again, and shows a range of hills above a sandy beach covered with a bank of thick trees.

A little to the North of Loango Bay, two distinct ranges of hills, with bare summits, exhibiting only a few lines of verdure, separated by a short interval, from each other, run towards the bay. They are very steep on the shore side, and are of a bright red colour. The green lines, separating the naked parts, and dotted with palm trees, exactly resemble hedges between cultivated fields.

The land at the bottom of the bay, seen from a distance of 3½ miles, shows a thick line of trees round the beach. Above this uniform line, in the North, and some distance behind in the interior, is seen a mountain, flat at the top, with rounded ends, which are very precipitous. A little to the South is seen another long continuous chain of hills, which decrease in height towards the South.

Indian Point, at the S.W. of Loango Bay, which, according to M. Kerhallet, is in lat. 4° 40′ S., lon. 11° 42′ 4″ E., is low and wooded at its extremity. But a little inland it rises, and shows some barren hills of a red tinge, overhanging some ravines which are covered with vegetation. Their appearance is very striking from the South. This point is prolonged by a bank, called *Indian Bar*, which reaches more than half a mile to westward, but in the N.W. and North extends 2½ miles. When the sea is at all rough, it breaks on the bank for a mile out.

At the bottom of the bay, one large hut, easily distinguishable, is built close to the shore. It is three-quarters of a mile N.W. of a rivulet of fresh water, which, after running parallel with the beach for three-quarters of a mile, only separated from the sea by a narrow strip of sand, flows into the sea about a mile from Indian Point. The water of this stream is bad, and it is better to get it from another brook about half a mile North of the hut we have mentioned.

LOANGO.—The town of BOOALI or LOANGO, the capital of the kingdom of Loango, lies 5 miles from the shore inland, and 15 miles North of Point Indian. A little more to the South is the village of *Kinpookoo;* more South still, 3 miles inward from the centre of the bay, is a place called Looboo, set apart as a burial place of the princes of the blood. This spot may be known out at sea by a clump of thick bushes on the top of the heights, called the *Wood of Looboo.* A little more South still, and 5 miles inland, is the burial ground of the kings of Loango, called *Loanghilli*, situated on the right bank of the stream, which runs into the bay in the South. The factories are not seen from the bay. They are built in the ravine between the hills in the first range; to get to them, you must land near the hut on the shore, and then follow the path near it. There are two English factories at Loango, and several other Portuguese and Brasilian.

This bay is an active market for the slave trade. The two marks for distinguishing the Bay of Loango are, when coming from the North, the red hills we have mentioned, and from the South the Wood of Looboo. When coming from the North to the anchorage, keep the house on the shore S.E., and keep on with this bearing. By this means, you avoid the reef off Indian Point, which is also called Indian Bar. The bottom shallows gradually towards the shore of the bay, so you may cast anchor in any depth you like. In the bay the depth varies from 9 fathoms, on the line between the two points, to 2 fathoms near the beach. The East of Indian Bar is very steep, and the depth varies from 2 to 7 or 8 fathoms near its N.W. end. When entering the bay from seaward, keep Looboo Wood bearing S. 82° E., and steer right for it with this bearing.

The bank of soundings appears to extend for a long distance off the centre of Loango Bay. Thus, 5 miles West of the line joining the two points there are 12 fathoms, mud; 14 miles, 18 fathoms; 22 miles, 32 fathoms; and thus increases to 60 fathoms at 50 miles out.

The anchorage most convenient for entering is to bring Indian Point to bear South, and the hut on the shore S.E. by S.; you will then be in 4 fathoms, reddish brown mud; the usual bottom of the bay being this, with sand and shells, or sand and coral. It is excellent holding ground.

It is prudent, in the stormy season, which begins in October, to anchor at the place indicated; for the squalls, which are sometimes very violent, generally come from the East, and you should not come too near the Indian Bar, on which the vessel would be driven, if she should drag the anchors. There is otherwise no chance of this if the cables are good, since the holding is excellent, and there is never any swell. It is best in this anchorage to moor North and South; though convenient for watering, it becomes dangerous with rollers; so that on the first appearance of them the ship must be got under way, or be towed out to sea.

We have said that good water may be got from the brook North of the hut on the beach. But if you remain 24 hours in the bay, you will be able to get from the inhabitants fowls, pigs, goats, vegetables, bananas, and gourds; they may be got in exchange for merchandise or dollars, the coin best known by the natives, who are great thieves, but otherwise inoffensive. The regular trade is chiefly in ivory, which is very abundant.

Captain Owen says, that Loango Bay affords excellent shelter to small vessels; and even for large ones it is preferable to Kabenda, which is 19 leagues more to the southward. The scenery is likewise more varied and interesting, although the dwellings of the inhabitants are, according to the custom of the country, not visible from the sea.

being hid in luxuriant low lands; a custom which doubtless has had its origin from the system of kidnapping so much practised by the Portuguese.

The natives were very friendly. Numerous lagoons exist at about 200 feet from the sea, extending parallel with the shore, and communicating with the beach in various places by drains or small creeks.

The tide rises 6¼ feet in the bay, and the establishment of the port is at 4^h 30′. The ebb tide runs out of the bay very fast, especially in spring tides.

BLACK POINT BAY.—Indian Point is the North point of another bay, still safer and better sheltered than that of Loango; it is called Black Point Bay, from the name of its South point. South of Indian Point the sandy beach reappears; and between the hills and the sea is a beautiful plain covered with tall trees of dark foliage.

The land is moderately high, fertile in appearance, and well cultivated, with hills and valleys, then a line of downs, on which are here and there some very picturesque woods. South of the bay, these trees come down to the beach, and form a low, dark headland, thence called Black Point. It is the South extremity of Black Point Bay. At the bottom of the bay the plain is 3 miles wide, and looks very pleasant.

Black Point, in lat. 4° 49′ S., lon. 11° 45′ 22″ E., lies 9 miles S. ¼ E. from Indian Point. A bank, which does not always break, but generally shows, runs along the N.W. of Black Point for about a mile, and for two-thirds of a mile to the West. Therefore, when coming in to anchor, a wide berth of 2 miles must be given to this point. This bank is very steep-to; in the North part of it there are from 8 to 10 fathoms, which decrease regularly.

The soundings in the bay are very regular, and diminish gradually, from 10 fathoms on the line between Indian and Black Points to the shore.

From Black Point the coast within the bay trends round to the East for about a mile, forming a low, sandy, narrow peninsula. This peninsula, running parallel with the shore at the bottom of the bay, forms also a sort of inner bay, with a narrow entrance, between the East coast of the bay and the prominent extremity of the peninsula. This second bay is open only to the East, with a depth of 12 or 13 feet. The extremity of the peninsula is called *Sandy Point.* A lagoon and a village are situated at the bottom of this second bay.

In standing into Black Point Bay from seaward, there will be seen, among the other trees which crown the hills, the clump of bushes, or Looboo Wood, of which we have spoken before. When it bears N.E., then make directly for it, and so avoid the bank on the N.W. of Black Point. The depth, on this track, decreases gradually from 18 to 4 or 5 fathoms, where the anchor may be dropped, if thought convenient. Or, as the depth decreases gradually, you can anchor anywhere in the bay, according to the vessel's draught of water. One of the best anchorages is on the line of Sandy Point, near the village, keeping it South, and Black Point W.S.W.; where there are 5 fathoms something less than a mile from the East shore of the bay.

But being so near the shore, in case of rollers setting in, we must repeat the remark we made in the case of the anchorage at Loango. Large ships also had better anchor with Black Point bearing S.W. ½ S., and Indian Point N. ½ W., 1 mile from the shore. There is a troublesome ground swell, but the holding is good.

When making for the bay from the South, care must be taken not to confound Black Point with another point some miles to the South, which very much resembles it. It is very necessary, therefore, to look out for the Looboo Wood, to determine exactly where the ship's place is. This second headland is called *False Black Point.* It is 6 miles South of the true Black Point; Looboo Wood cannot be seen till to the North of False Black Point, and hence the necessity for taking it as the mark. After running to the N.E. as far as where False Black Point can be clearly distinguished, the ship's head can be turned to the S.S.E. to get to the anchorage, going by the lead.

The landing is good in the creek on the North of the Bay, and fresh water can easily be got there at a spring; sometimes, however, it is not plentiful. And besides, the getting the water on board is a laborious work, because you cannot get near the watering place on account of the shallowness of the water in the creek, and so the water has to be carried in small casks. About a tun an hour can be got in this way.

The best and most abundant watering place is 2 miles South of this creek. It is a *small lagoon* fed by a spring about 45 yards from the beach, very near to which you can moor with a grapnel if the swell be not too strong. There is a pathway to it, which, however, will have to be cleared of grass and brushwood to make it passable.

The position of the lagoon is 1¼ miles S. 60° E. of the anchorage ground indicated for large ships. Captain Mundy, of H.M. frigate *Iris*, put up a beacon to mark the spot.

Poultry can be obtained in this bay, and pigs, goats, vegetables, and some kinds of fruit, in exchange for goods or dollars. The bay is an active mart for the slave trade.

LOUISA-LOANGO RIVER.—From Black Point the coast runs S. by E. ½ E. for 18 miles, as far as the River Louisa-Loango, the northern boundary of the kingdom of Kacongo. It is moderately high, wooded, with a white sandy beach, and some prominent undulations. It is safe, and very steep-to. Three miles out there are 7 and 9 fathoms, soft muddy bottom. The low woody country terminates at the Louisa-Loango River. Some breakers indicate the North point of the mouth of this river, which is of considerable length, and is said to run first to the East and then to the S.E. On the left bank, 40 miles up, is the town of *N'Singa*; and 58 miles up on the right bank is the town of *Kinghelé*. We have no information of interest about this river.

KACONGO BAY.—At 9 miles S. by E. ½ E. is the River Kacongo. M. Kerhallet says:—"The two rivers, Louisa-Loango and Kacongo, both run into one bay, which is called, we know not why, the Bay of Kacongo, and which we will call by this name to avoid confounding it with the bay South of Point Banda and North of Loango Bay." From the left bank of the River Louisa-Loango the land rises rapidly towards Kacongo Bay. The heights come right to the water's edge in the North and near to the Kacongo River.

The swelling hills are covered in places with dark coloured trees, which stand out very distinctly from the greenish grey herbage which grows where there are no trees. This first range of moderately high hills terminates at the right bank of Kacongo River. There the country is low for a space of 2 or 3 miles; and then, on the left bank of the river, the coast rises again, attains nearly the same elevation as before, and as far as Malemba the hills are of the same appearance as those on the North of the right bank; only they are more abrupt on the side towards the sea, which reaches to their foot, and are furrowed here and there by ravines down to the shore: they also show reddish patches in several places.

Kacongo Bay, which ought not to be so called, is a mere indentation of the coast, formed chiefly by the entrance to the Kacongo River, which appears to be a large stream. The sea is very much discoloured for a considerable distance, as far as where there are 17 or 19 fathoms, muddy bottom, 7 miles out. On the right bank of the Kacongo, which appears to run E.S.E. and S.E., stands the town of *Kaya*, 30 miles from its mouth, and 8 miles further the town of *Boonia*. We know nothing about the entrance or the navigation of this fine stream.

From the South point of the mouth of Kacongo River the coast takes a S. by W. ¼ W. direction for 10 miles to Point Malemba, the S.W. point of the Bay of Malemba. In this distance, two watercourses intersect the shore; the first, 3 miles South of Kacongo River; the second, at 6 miles.

MALEMBA.—The country around Malemba is elevated like that we have just described, only the projections are more prominent, the ravines more declivitous; the sides towards the sea, which washes their foot, are so abrupt as to form rugged, precipitous cliffs, covered with vegetation. The Bay of Malemba terminates in the S.W. by a point of the same name, which is a headland projecting from this rugged tract. The effects of light and shade in these parts are very singular.

POINT MALEMBA is formed by a tongue of land, of an even surface, covered with grass. It runs from the foot of the high cliffs, in a N. by W. ½ W. direction, into the sea. Viewed from its extremity, which shows at its base a reddish, ferruginous appearance, it descends in a long slope to the sea, and seems detached, by its dark shade, from the less tinted land at the bottom of the bay.

The small but excellent Bay of Malemba is one of those indentations in the coast, of the form which is in some sort common to all the bays on the African coast, South of the Equator. They almost all penetrate in a S.E. direction, are open to the S.W., and sheltered on the West side by a bank or tongue of land, often level with the sea, stretching from the S.W. part of the bay some miles towards the N.W., and so protecting the anchorage ground from the swell of the sea and the prevailing winds. This almost universal form of the bays on the West Coast of Africa, South of the Equator, is owing most probably to the action of the swell from the South and S.W., combined with the prevalent current, which runs up the coast from South to North, and turns to the N.N.W. and N.W. This peculiar character of the bays often renders them very difficult of recognition when coming from the West, because then the banks which skirt the points from the S.W., not being distinctly visible out at sea, or being confounded with the land at the inner parts of the bays, are thought to be merely indentations in the shore, offering no shelter. This is the case in the appearance of the bay we are now describing.

Its S.W. point, Point Malemba, is prolonged seaward in a N.W. by N. direction by a bank, on which are 3 fathoms of water. This narrow bank, being less than a quarter of a mile wide, is 1¼ miles long from the point. It is formed of rocks, and on the top of one of them, four-fifths of a mile out from the point, there are only 10 feet of water. The sea breaks on the very foot of Point Malemba; and to the West of the point the bank extends three-quarters of a mile. This bank, which forms the West side of Malemba Bay, is not always visible. From Point Malemba, eastwards, the coast runs in, and forms, as in Black Point Bay, a prominent peninsula, parallel with the shore, from which it is distant about 170 yards. Its extent from Point Malemba is about half a mile. It is low and sandy.

The breadth of the Bay of Malemba, between the end of the bank and the shore, is nearly a mile, and diminishes gradually inwards.

Around the bank on Malemba Point, in its steepest part, there are 4, 4½, and 5 fathoms, with a bottom of sticky mud, like clay. In the bay the bottom is of the same character, and its usual depth varies from 4½ to 4 fathoms. At its entrance there are 5 and 6 fathoms water. It is here you must anchor, about 3 miles from the bottom of the bay, and 3 miles from Point Malemba, with the Point bearing S. by E. The red colour of the hills to the North of Malemba Bay, with the Point of Malemba itself, is a good mark to recognize it by.

Opposite the bay, 3 miles inland, is the village of *Mayooba*; then further South, on the parallel of Point Malemba, 7 miles up the country, is the village of *Kilonga*. It is this latter, no doubt, which has induced some navigators to give the name of Kilongo to the bay more to the North, which we have called Kacongo.

Malemba Bay, excellent for small vessels, is not fit for those of greater draught; for these, being obliged to anchor a long distance out, are generally troubled with the heavy rolling sea. Rollers are frequent and very strong at this point, particularly at the time of full moon. They occur oftenest during calms. Thus, frequently even small vessels dare not anchor in the bay to the East of the bank on Point Malemba, for they find themselves, in storms, or during these tide races, in circumstances very similar to what we described in reference to the Bay of Loango, at the inner anchorage. On this account, therefore, ships which come to water prefer anchoring to the S.W. of Malemba Point, in 6 or 7 fathoms, mud, or in 7¾ fathoms, sand and gravel, at 2 miles from the shore, which is abrupt, and the beach very narrow. There is a fall of excellent water there.

You can land in small boats at the foot of Malemba Point, on the East side, when you want to go to the factories in the bay, which are built on the top of the shore, and are approachable by direct pathways. It is an active market for slaves.

A small rivulet runs at the bottom of the bay, of excellent water, which may be got without difficulty, and you can land on the beach, there being no tide races there.

Malemba may justly (says Captain Adams) be considered as the Montpelier of Western Africa.

The trading town of Malemba is under the command of a *Cheenoo*, or chief, who resides at *Chingélé*, or *Kinghélé* (before mentioned), about 18 or 20 leagues from the sea. It stands near the margin of a cliff that rises abruptly from the shore to an elevation of 100 feet, and is composed entirely of a dusky red argillaceous earth.

On gaining the summit of this cliff, an extensive and beautiful plain presents itself as far as the sight can reach, to the East and South. To the North the country is broken with the windings of the Kacongo River, the margins of which are finely wooded. The plain is covered with a luxuriant grass, and clumps of trees are scattered upon its surface, having the appearance of being planted by the hand of man, to afford him shelter from the sun and rain, and to adorn the landscape.

The climate of Malemba, in comparison with other parts of Africa, is very salubrious, owing to the dryness of the atmosphere and soil, and the absence of those deep forests so common in other districts; the Europeans trading here have, in consequence, almost uniformly enjoyed good health.

The natives are a mild, tractable, and inoffensive people, not at all warlike, but are said to be great thieves. They form a striking contrast to the people of the Gold Coast, who are turbulent in disposition, averse to innovation or improvement, and over whom the forts have not any control beyond the reach of their guns.

From the steep cliff which forms Point Malemba the coast runs about S. by E.; and nearly 4 miles from the point there is another, low and rather prominent, which defines the end of the cliff. It is called Point Cascaes.

POINT CASCAES.—The North point of the Bay of Kabenda is a seaward extension of a lofty hill of the same name. This mountain, which is a part of the general range, differs from it in respect of its having no bluff projections. Seen from the North and the South, Point Cascaes is distinguished by a brighter colour from the land off which it projects.

South of this point the hills which lined the coast disappear, and there is a low plain which extends southward as far as the mouth of the *River Belé*, about 5 miles from Point Cascaes, in the Bay of Kabenda. There is a great number of palm trees in this plain, which is very wide, and runs to the East to the foot of some hills, which are very declivitous and abrupt on their West side.

The RIVER BELE', about 6 miles N.E. from the S.W. point of the Bay of Kabenda, is a small watercourse, bounding the territory of Kacongo on the South, and on the North that of *N'gayo*, which extends as far as the right bank of the River Congo (Rio Congo).

From the left bank of this River (Belé) runs a bank of sand and rocks, called *Belé Bank*. The extremity of the Bank has only 2¾ fathoms of water on it, but the sea does not break except with the ground swell or races. It extends in a West direction more than 2 miles, as far as the line between Point Malemba and the S.W. point of Kabenda Bay, called Point Palmas, or Kabenda Hook. To avoid it, from Point Cascaes you must keep 4 miles from the shore, or in soundings of not less than 8 fathoms, when you want to coast along to make Kabenda, or when you go out of the bay to the North.

From the anchorage at Malemba to the Bay of Kabenda the course is very nearly S. by W., and you must keep the lead going to be sure of the proper depth.

KABENDA.—The extremity of Belé Bank lies N. by E. ½ E., 4½ miles from the town of Porto Rico, on the heights on the Bay of Kabenda. This town is also called Kabenda by some navigators.

The Bay of Kabenda is one of the most remarkable points in this part of the coast, because its population is more industrious and civilized than the people elsewhere, and also because it is a very active slave mart. All the slaves from the Congo River and the surrounding country are brought here.

KABENDA HOOK. The S.W. point of Kabenda Bay is called Point Palmas, or Kabenda Hook. It is in lat. 5° 32′ N., lon. 12° 5′ 22″ (Kerhallet). It is a tract low at its extremity, and covered with bushes, which rise gradually and become of moderate height some distance from its extreme end. On the highest part are some bushes, and there are bare patches between the shore and the summit. Some huts are visible at the North of the point.

A bank runs along Kabenda Hook on its W. and S.W. sides, on which the sea usually breaks; it does not extend more than 550 yards to the North. To the East of the point, and close to it, there are some rocks joining on to the shore. There is very convenient landing there. The coast then curves inwards, and presents a fine sandy beach, which describes a regular curve from North to East for about 1½ miles, and then runs out again to the North.

The town of Porto Rico, or Kabenda, is very plainly seen from the North, and lies about half a mile from Point Palmas. The houses, with various flags upon them, are large and well built; footpaths lead from the sea side to the top of the hill where they stand.

About 1½ miles from these are seen some huts standing on the left bank of a small stream, which is the watering place, and is called *Locola*; the water got there is not very good. Small vessels can enter the river.

The land at the bottom of the bay is tolerably high, partially wooded, and of a reddish colour. On these heights, and to the North of the watering place, are several villages, called *Vanati*. More to the North is a point called *Umbrella Point*, rounded and sloping gently to the sea. This point is on the left bank of a small river, called *Lolondo*. The land then, winding to the North, gradually becomes very low in the neighbourhood of the River Belé. On the hills at the bottom of the bay, a little to the South of the River Lolondo, there may be noted some tall trees, covering their summit.

In approaching Kabenda from the northward, you should not haul in for the Bay until Porto Rico bears to the eastward of South; and when approaching from the southward, not until Kabenda Point bears S.E. These two bearings will lead you clear of the Belé Bank in the North, and the shoals of Kabenda Hook to the South, and you may thus approach Kabenda Point, and anchor at any convenient distance. If desirous of entering the Bay, or inner anchorage, you should bring Kabenda Point to bear S.S.E., or S.E. by S.; then steer directly for it, until you shoal your water to 3 fathoms: you may then steer along the South shore into the Bay, giving Kabenda Point a berth of three-quarters of a mile. The best berth in the inner anchorage is with the Western Factory S.W.; Porto Rico, S. by W.; and the extreme point, W. ¾ N., in 3½ fathoms. There is also good anchorage in the entrance of the channel, in 4½ fathoms, with Porto Rico bearing S. by E., and Red Point S.W. ½ W.

In the offing you may anchor at any distance, and in 35 fathoms, out of sight of land.

The *Barracouta*, from the southward, arrived here in an evening of January, 1826, and anchored; and on the following morning got into the Bay with a sea breeze. "This is a small but good roadstead for moderate sized vessels, being 1½ miles in length, with about 5 fathoms of water in the deepest part. Situated at the head of the Bay is a large town,* where the king resides. The huts here are well built and capacious, and we found the natives very desirous of 'making trade.' The surrounding country, as seen from the anchorage, appeared in a high state of cultivation; but whether the soil is indebted to the inhabitants or nature, we could not determine. The latter is whimsically prolific on some parts of this coast; while at others, her sterile frown withers every bud of vegetation as it shoots forth."

The following remarks are from Captain Owen:—

"From Kabenda to the Zahir, a distance of 36 miles, the country is particularly fertile, and has a most luxuriant appearance, with apparently a large population, as numerous canoes may be seen fishing off the shore. The land is low near the shores, but sometimes terminating in a cliff; while, at a short distance inland, may occasionally be seen a high and sloping ridge of beautiful park land, the valleys presenting a most fertile prospect, abounding in groves of trees, among which the common palm was the most conspicuous. Kabenda is resorted to principally by slavers, of whom five were at anchor.

"The numerous huts that skirt the Bay in groups, and extend inland to the distant hills, can scarcely be considered as forming a town, but rather an assemblage of villages, each respectively governed by a *Mafula*, but the whole under the superintendence of *Prince Jack*, next heir to the king, whose capital is *Goy*, a large town about 6 miles from the sea, containing a great population. The whole coast presented the appearance of being densely inhabited.

"Prince Jack, with six of his daughters, visited the *Barracouta*. He appeared to be upwards of fifty, good tempered, but with much affected dignity. He stopped on board during the night, and behaved at supper with much propriety.

"The scenery in Kabenda Bay is composed of lofty cliffs, verdant hills, and deep luxuriant vales. A great variety of trees, both in size and species, are dispersed in every direction, rendering the appearance of the country picturesque and pleasing. It is, however, impossible for a vessel touching for a few hours only to obtain provisions; for, as they are a minor branch of trade, when compared to that in slaves, ivory, or cam wood, none are engaged in it but those who have not the means to pursue any other. The residence of these people is in the country; and great delay takes place, even after they have received information of a vessel's arrival, before they come with their stock: and then the articles for exchange (for they will not take money) must be sent on shore, and the whole process of bargaining gone through.

---

* When a town, in these parts, is spoken of as being large, the reader must not picture to his imagination a city of streets, squares, and palaces, but a few rudely formed huts, projected by necessity, and constructed by instinct, unassisted by art; yet, in a country where the most important is not larger than a European village, such a distinction serves, in some measure, as a guide to their relative sizes.—*H. B. R.*

"There are no bullocks here, but numerous herds of buffaloes range the forest in a wild state. These are hunted down and shot. Sheep are also scarce, but goats are plentiful, as well as ducks and fowls, but very dear.

"The natives were very desirous of procuring tobacco; but, as our crew were not overstocked, we did not barter much in that article.

"Parrots are very numerous here, enlivening the woods with the most shrill and discordant noises."

M. de Kerhallet says, "Kabenda is not a place for provisioning. But fowls, goats, and some kinds of fruit may be got, which may be advantageously exchanged for merchandize, or *fazenda*, a kind of coarse cloth. The Bay, moreover, abounds with fish.

"The inhabitants of Kabenda are intelligent and industrious. They resemble, in some respects, the negroes of the Krou country, and willingly engage themselves to serve on board ship, during a stay upon the coast. They are also very useful in loading and unloading vessels.

"The trade at Kabenda is in ivory, gum, wax, honey, and, above all, in slaves. There is also a little orchilla and gum copal to be got."

From Point Palmas the coast runs S.W. ½ S. for 12 miles, as far as the projecting headland, called *Red Point*. The bank around Point Palmas, extending along it towards the West, continues to follow the coast, with a breadth of 1½ miles, as far as the Point. On some parts of it there are generally breakers.

The coast between Point Palmas and Red Point is low, covered at its edge with trees and mangroves. It rises a little in the interior into hills of a reddish colour, which are abrupt on the side towards the sea. This first line of hills is overtopped by another further back, a good way in the interior.

The hills in the first range, of a nearly uniform height, rise 3 miles South of Kabenda, and extend to the mouth of the River Congo. Their summit, slightly undulated, only shows some depressions, with angular edges. In some places there are seen palm trees, which look as if they were laid out in regular plantations; sometimes the trees on the shore are interrupted by forests of palm trees, presenting the same appearance.

These hills, of an argillaceous nature, burned by the sun and beaten by the rain, are very friable and crumble easily. A great number of torrents descend from their tops, and cut deep gullies in them. Dried up in the fine season, they become vast torrents in the rainy season. South of Red Point the coast shows more distinctly the two lines of hills.

Five miles South of Point Palmas, two of these hills, nearer and higher than those around them, have received the name of the *Dous Montes*, the *Two Hills*.

In this part you must give the shore a wide berth on account of the bank which runs along it. Five miles off there are 5, and 5½ fathoms, the bottom of mud; 6 miles off Point Palmas there are 9 fathoms.

RED POINT is low at its extremity, covered with trees, and hardly discernible from the East, but it is prominent enough when seen from the North or South. This headland rises rapidly for a short distance inland, and there it is overtopped by a small eminence, which is the highest point of the hill nearest the shore. This eminence is called the *Red Mount*, on account of its colour. In the neighbourhood of the Red Mount, on the top of the hills, is a mound of palm trees, looking like a plantation.

Red Point is skirted by a bank, on which the sea breaks. On the edge of it are 6 fathoms. From Red Point it extends westward 9 miles out to sea, and nearly reaches to the South point of Kabenda Bay.* The coast, between Point Palmas and Red Point, is inhabited, and appears to be well cultivated.

From Red Point to *Point Boolambemba*, the North point of the River Congo, the coast runs in nearly a straight line for 27 miles to the S. by E. ½ E.; only presenting some very slight curves.

---

* *M. Rouxo de Rosencoat* is the only commander who gives this extent off Red Point.—*Kerhallet.*

The coast, at the foot of which is a narrow, sandy beach, exhibits nearly the same aspect as that already described; and as far as Pirate's Creek, a little to the North of Point Boolabemba, there is a range of hills, of an almost uniform height, sometimes bare, sometimes covered with clumps of trees.

About 4 miles to the South of Red Point commences the great bank of *Mona-Mazea*.[*] On this vast bank the depths vary from 23 feet on its edges to 10½ feet. It extends 6½ miles from the shore in its greatest breadth, and runs along it as far as the mouth of the Congo River; but then, near its extremity, there is no bottom at 50 fathoms, nor even in some places at 100 fathoms.

From the depth of 4 and 4½ fathoms the Mona Mazea bank shoals very gradually towards the shore; though in several places the depth is irregular, and varies somewhat rapidly. For instance, from 23 feet you come suddenly to 3 fathoms. The bank does not usually show above water, and only displays some patches of rock on which the sea breaks strongly: in tide races it may become dangerous.

This bank is exceedingly useful for the navigation of the Congo River, of which we shall speak presently. The Congo is the southern limit of the kingdom of Loango.

DESCRIPTION OF THE ROADS OF LOANGO, MALEMBA, AND KABENDA, BY THE FRENCH MISSIONARIES OF 1773.

"The ROAD OF LOANGO is good, and ships lie there well secured. To the S.W. it is bounded by a low point, at whose extremity are some rocky ledges, that stretch above a league into the sea, and shelter you from the S.W. winds: when you are coming in, you leave their outermost end to the W.N.W. of the ships seen in the road, which ships must be brought to bear S.E. to go to them.

"If no ships are perceived at the anchorage, you are to steer S.E. toward a remarkable tuft of trees, called *Looboo Wood:* or if you are afraid of some mistake, set up a flag, and fire a gun; and the negroes will come immediately in their periaguas, and show you the anchoring place.

"You find from 6 to 7 fathoms of water, 2 or 3 leagues off-shore; then you come suddenly to 5, and insensibly to 4, fathoms; this depth leads you to the anchorage, in 17, 18, 19, and 20 feet of water (according to the size of your ship), oozy ground, mixed with fine sand. You moor across, N.N.E. and S.S.W., 1 mile from the land.

"When you are moored in 20 feet of water, the South point of the Bay is bearing S.W.; Looboo Wood, S.S.E. 5° E.; and the middle of Ma-kimbe Wood, E.S.E. 5° S.

"The best place for small vessels is in 17 and 18 feet of water; then the South point is brought to bear S.W. ½ W. and W.S.W.; and you are by that means secured against the violence of the occasional currents; but in this berth, being nearest the land, you are exposed to its noxious exhalations, chiefly during the season of the greatest heat and of the rains; that is, from the months of October or November to those of April or May.

"The boats do not come to the shore, but remain at anchor in the offing, without a bar, upon which there is a great swell; and the landing is made with periaguas.

"To go out of the bay, barks may steer N.W. when there are breakers, and W.N.W. when there are none; but vessels ought to stand to the N.N.W. at least.

"The BAY of MALEMBA lies to the N.N.E. [*North*] of Kabenda. When no ships are seen there, the marks for the road are, a small hillock, which borders the shore, and a little rocky point, extending into the sea. You anchor at a good league from the land, without any shelter.

"When you are approaching the coast, you find a ledge of rocks under water, at the end of the little point just mentioned; the boats, in passing over it, to fetch the landing place, go more or less from the point, according to the swell of the sea: when once past the pitch of this point, you turn in on the right, along its side; the swell decreases as you approach the shore, and you may come near enough to land without periaguas.

"KABENDA.—To enter into Kabenda, you are to steer toward a great tree, easily seen at the bottom of the bay, and bearing S.E. by S.; by that means you avoid, and leave on the larboard side, the sandy banks at the entrance of *River Belé*, which are very dangerous, and on which the sea sometimes breaks.

---

[*] *This is perhaps the bank that Captain Rouxo de Rosencoat speaks; or it may reach as far as Red Point.* This is not shown on the charts.—Kerhallet.

"You must take care, likewise, to give a proper berth to Kabenda Point (*Point Balma*), which is bordered with shelves that stretch a mile to seaward.

"The riding there is in 3½ fathoms of water, soft ooze. You moor across E.N.E. and W.S.W., the best bower to the larboard, on account of the gusts of wind from the South and S.E. Those from the N.W. are sometimes very violent; but when you moor E.N.E., both cables are labouring together.

"To be in the proper berth, Kabenda Point must bear W.S.W. half a league; the factory's landing place, S.S.W. 1 mile; and the great tree at the bottom of the Bay, S.E. 2 miles."

COAST OF CONGO.*

In 1484 Diego Cam set out from the settlement of Elmina to continue the survey of the West coast of Africa. He crossed the Equator, and discovered the River Congo, also called Couango, Zaïre, or Zahir. He erected a marble column on the South cape of the entrance to it, and thence the cape has taken the name of Cape Padrão (C. Pillar), by corruption Padron. This discovery obtained in those days considerable renown.

The kingdom of Congo extends to the South as far as the River Dandé, which is the northern boundary of the Portuguese possessions on the West coast of Africa, South of the Equator. The three provinces to the West of this kingdom, which are washed by the Atlantic, are called, the most northerly, Sonhio; the middle one, Bamba; and that to the South, Mazula. They are entirely independent.

The West coast of Congo, on the ocean, has only an extent of 153 miles, from Cape Padrão to Point Dande, the South point of the mouth of the River Dandé. The South boundary of the province of Sonhio is the River Ambriz. The province of Bamba is separated from that of Mazula by the River Onzo. On the left bank of this river, and near its entrance, stands the town of Mazula. The whole of this country is intersected by a great number of rivers, descending from the western side of chains of hills in the interior, to which the Portuguese have given the name of the mountains Do-sal, Do-Sal-Nitro, Do-Cristal. The principal rivers of the coast we are now engaged upon are, as we proceed from North to South, the Rivers Ambriz, Couza, Rio Doceor, Loze, Onzo, and lastly the Dandé.

The soil of Congo is exceedingly fertile; and its hills produce iron, copper, crystal, porphyry, and jasper. European cereals might be advantageously introduced there. It yields also the fruits and vegetables of tropical climates. Tobacco and the sugar cane are also grown. Ivory and palm oil may be obtained. Vegetation is very luxuriant, and there are many forests of useful woods. The slave trade is carried on, on a great scale, and it will be very difficult to exterminate a traffic which the Portuguese have adopted so extensively throughout the whole territory.

The RIVER CONGO, ZAIRE, or COUANGO, as it is usually named, is called by the inhabitants of the country *Moïenza-Enzaddi*. It is said to have a course of 600 leagues, and it is supposed to rise from the Lake Akelounda. But this is quite conjectural, for its course is unknown beyond 100 leagues from its mouth.† The coast was explored by Captain Tuckey, by order of the English Government, and was surveyed, in 1825, by Captain A. Vidal, R.N.

Its principal known tributaries are the Wambre, which joins it in about lat. 6° S., lon. 14° E.; and the River Lumini, which enters it about 43 leagues above the Falls of Yellala, which are about 112 miles from the mouth of the Congo. These two rivers appear to have a southerly direction. The course of the Congo above them appears to be N.N.E.; below them, and after their junction with it, it has several bends, but chiefly flows in a S. 60° W. direction for a distance of 68 miles. It is joined here by a considerable number of secondary streams.

---

* We have taken much of the introductory matter of the section from the Manuel de la Navigation de la Côte Occidentale d'Afrique, by M. Ch. Ph. de Kerhallet, 1852. The remainder from our former edition, &c.

† The mystery of its origin, however, appears to be on the eve of being cleared up, as Dr. Livingston, in his remarkable journey in 1853-4, from the neighbourhood of L. N'gami to St. Paul de Loanda, through Cassangé, crossed some streams which, flowing to the N.W., were supposed to be the upper portions of the Congo.

The Congo brings down an immense volume of water, which has hollowed for itself a narrow bed, of very variable depth. In many places there is no bottom at 200 fathoms. Forty miles from its mouth its waters are only partially mingled with those of the sea, and sometimes 9 miles out they are still quite fresh.

The main body of the stream of this mighty river is indicated by floating masses of bamboo, and debris of all kinds, which it carries far out to sea. The velocity of the current is said to range at from 4 to 8 miles an hour. It is high water, at full and change, at 4ʰ 30′ at the mouth of the Congo.

The stream of the River Congo is felt a great distance out at sea, and ships which cross it, in going to the North or to the South, ought therefore to guard against it.' It is stated that 300 miles out the water is discoloured, and that the current of the river is perceptible at that distance, which is not impossible.

The Congo is only 7¼ miles wide between the West point of its entrance, called *Shark Point*, and the East point, called *Boolambemba*. The former bears W. by N. from the latter.

It is 24 miles from Red Point, described before, to Shark Point, and 29 miles between Red Point and Cape Padrão, the S.W. point of the mouth of the river.

Within these four points the mouth of the Congo is funnel shaped, being very wide in its West part, but considerably contracted between Shark Point and Point Boolambemba, and the bank of Moua Mazea still further narrows it.

The banks of the river, formed of alluvial deposits, are covered with mangroves, one species of which grows to a considerable size; it has a straight stem, sometimes 100 feet high, supported by an arch of roots, which rise as much as 20 feet from the ground. The spaces between these giant mangroves are filled with various kinds of trees of smaller growth, among which are a good many palm trees. Other parts of the banks are lined with common mangroves of low growth. The country near the river is low and marshy; but at some distance inland may be seen some wooded hills. Shark Point, which is covered with the tall mangroves of which we have been speaking, is considerably higher than the land on the right and left of it.

The rising of the Congo occurs six weeks after the commencement of the rainy season, that is, about the middle of November. It then rises 8 feet 9 inches above its ordinary level. The stream becomes very rapid, and bears along with it floating islands, formed of the roots of plants of all kinds, covered with bamboos and grass; these are very dangerous for ships under sail, and especially for those at anchor. Some of them are more than 100 yards long.

The rains, no doubt, have much to do with the rising of the river; still we do not think they are the sole cause of it, but that it may be partially attributed to the strong sea breezes which blow at this period, and necessarily contribute to retard the flow of the waters, and to dam them up, as it were, in the upper parts of the river. Indeed, in the years 1845-6-7, the rains were very trifling on the Congo coast, yet the Congo did not rise the less, though it was not so strong as usual.

It is a subject of regret that navigators, who have had occasion to enter the Congo, and to remain there some time, have not furnished us with more information about the tides. For all our researches, we can only give a few observations, which are far from being sufficient. We will speak first of the currents outside the mouth of the river.

The waters which come from a river, in running out to sea, usually diverge somewhat from the original course, and join the general current which sets along the coast, at a certain distance out. The point of junction of the two streams varies, as to its distance from the entrance of the river, according as the waters of the latter have more or less speed, or the current itself is more or less strong.

Although the rise or fall of the level of the waters is often perceptible at the junction of the streams, the effect of the tides is not more marked than usual.

At the mouth of the River Congo, the commander of the French frigate *Vénus*, in a voyage to Kabenda in 1784, mentions having felt a strong current about 21 miles out, to the North of Cape Padrão. Being at anchor in 20 fathoms, the current was estimated by the log to set at the rate of 3 miles an hour towards the N.N.W. In the centre of the stream of the Congo the captain of the *Vénus* estimated the rate of it at 6 miles an hour; and at the time he was off the entrance of the river, the stream constantly set out of it, notwithstanding the effects of the tide. This observation is important; and we shall see hereafter how it may be turned to account.

Off the mouth of the Congo, beyond the distance of 35 miles, the currents set to the N.N.W., North of the parallel of Boolambemba; to the W.N.W., on the parallel of the Point; and to the S.W., South of the parallel of Cape Padrão. Their speed is very variable, and attains often, even at this distance, a rate of 3 or 4 miles an hour. Sometimes, at spring tides and the dry season, the strength of the current may be crossed without feeling its influence.

The waters off the Congo are very much discoloured with a yellowish red tinge; they are covered with foam and rubbish of every description. Very frequently, South of Cape Padrão, along the shore, the sea is very much agitated, and shows in overfalls. At 40 miles out from the mouth of the river the waters become of a dark and blackish tint. They are brackish at this distance.

You must not enter the River Congo without a commanding sea breeze, which usually rises about 9^h or 10^h in the morning, and blows from the S.S.W. to the W.S.W. The stream in the river has been found, as we have said, to run at the rate of more than 5 miles an hour. The direction of the stream is from Point Boolambemba on to the Mona Mazea bank, and runs along the coast up towards Red Point. Its course on this side is then North, or N.W., or N.N.W., when near the right bank of the river. In the middle of the river, between Point Boolambemba and the left bank, the stream sets to the West; and near the left bank it appears to follow the course of the bank, *i.e.*, West or S.W. In Diegos Bay, which is an indentation of the left bank, South of Point Shark, it sets towards the North as far up as this point, which it rounds, and on the meridian of which it takes a W.S.W. direction. Within the river, above Point Boolambemba, the current follows the direction of the banks.

Moreover, in the Congo, a rapid surface current, and an under one running in an opposite direction, is sometimes found to occur. In the instance in which this was observed, the ship, being becalmed, and drifting with the stream, was only carried at the rate of 1 mile or 1½ miles an hour, although the surface current appeared to be moving at the rate of 4 or 5 miles.*

There is no mascaret (bore) or *pororoca* at the entrance of the Congo, since this river appears to have at its mouth a bar, on which there is probably a depth of 20 fathoms, according to Captain Owen. Thirteen miles from Cape Padrão, the greatest depth that this officer found was 44 fathoms.

At the time of the new and full moon there are dangerous tide races, which cause the sea to break violently on a portion of the Mona Mazea bank.

Between Red Point and Point Boolambemba there are to be found, in the midst of the palm woods, the villages of *Ma-Camma* and *Mona Mazea*, the former 17½ miles, the latter 3½ miles, from Point Boolambemba; then 11½ miles from the same point, the *River Dos-Mosquitos*, which may be recognized by a remarkable wood on its right bank, called the *Fetishe Wood*. Lastly, 1½ miles to the North of the same point is *Pirate's Creek*, with a tolerably wide entrance; the village of Mona Mazea stands on the point of the left bank of this strand. In the mouths of these two creeks, which often afford shelter to slavers, are found 12 feet of water. Dos-Mosquitos River is very narrow, and divides into two streams a short distance from its mouth.

POINT BOOLAMBEMBA, also called *Fathomless Point*, is a low point, with a clump of trees a little higher than those around on its southern part. Beyond the point is seen the plain of the River Congo, running E. by S., low, woody, and intersected by numberless creeks or rivulets.

---

* *M. de la Condamine* mentions an analogous case. On the 28th August, 1743, the tide was felt at Pauxis, situated 100 leagues from the mouth of the River Amazon; the stream was moving seawards all the time, but still the level of the water rose, a fact which can only be explained by the existence of an under current.

"When at anchor myself," continues M. de Kerhallet, "10 miles off the River Pongo, I observed a similar phenomenon. The surface current always set to the N.W., according to the log, although the depth of water varied regularly and gradually, according to the ebb and flow of the tide."

A little inland a range of hills runs parallel with the shore from Red Point to Point Boolambemba, in a line with which it terminates. These hills, which are moderately high, appear from the offing to form the shore, which at their foot is lined with thick trees. Some single, scattered trees are seen on the top of these hills. With Boolambemba Point bearing E. ¼ N., and Shark Point S.S.E., at a distance of 18 miles from the former, the low coast is just distinguishable by the line of trees upon it, which have open intervals here and there. But to the right is very distinctly seen the rounded and pretty steep declivity which terminates the hills in the interior.

More to the South is seen the low, woody country of the left bank of the river, the trees appearing in the water at this distance; then, on the right, Shark Point is easily recognized by its tall mangroves.

SHARK POINT, as we have stated, is the extremity of a kind of peninsula, low and covered with trees, which stretches out to the N.E. Some lofty mangroves form a clump, remarkable for their height, at the extremity of this point.

To the East of Shark Point the coast trends inwards, and forms a bay, which is filled by banks with only 9 feet water on them. There is a narrow channel through them, caused by the flowing of several watercourses into the bottom of the bay, which is called *Sonhio*, or *Diegos Bay*.

Shark Point is steep-to, and near the sandy beach which skirts it you find 7 fathoms, then 26 fathoms. But a little to the East of its meridian you find, quite close to the sandy beach, 2 fathoms; and in its eastern part 4 and 5 fathoms close in-shore. You can pass it within one-third or even one-quarter of a mile.

At 2¾ miles to the W. by S. ¼ S. of Shark Point, the shore forms a gently rounded eminence, covered with tall trees, called *Turtle Corner*, and 3 miles W.S.W. from this point is Cape Padrão.

CAPE PADRÃO, OR PADRON, seen from the North, 7 miles distant, has the appearance of a perpendicular cliff, which runs down to the beach; just above the beach are some woods. The cliff forming the cape rises rapidly, with a rounded elevation; its summit is covered with a stunted vegetation, apparently of grass and brushwood. The colour of the cliff is remarkable for its rosy tint rather than red. Cape Padron is called by the Portuguese *Mouta Secca*, or Dry Thicket Point.

The land of Cape Padrão is low, and the sea washes the foot of the cliff. All the shore is safe hereabouts, and you can cruise along it in 10 or 13 fathoms.

When you come in sight of Cape Padrão from the South, you may see to the N.E. the land on the right bank of the river. From a distance you may often fancy you see a town and houses built in a semicircle, an illusion caused by a confused mass of rocks, which have this deceptive appearance. From Cape Padrão the land slopes down to Shark Point.

Between Point Boolambemba and Shark Point the entrance of the River Congo is well defined, and is, as we have said, 7½ miles wide. The right bank of the river then takes an E. by S. direction, forming at Point Boolambemba a very acute angle, while the left bank trends inwards gently, describing a semicircle.

In nearing either bank the depths vary from 6 to 8 fathoms, except near Point Boolambemba, where there is no bottom at 93 fathoms, one-third of a mile out.

In mid-channel there is no bottom with 80 to 100 fathoms at the mouth of the river, and for a distance of about 25 miles up the stream. This circumstance renders the navigation very difficult, and sometimes even dangerous. It will, therefore, be always prudent to get a local pilot, from Kabenda or elsewhere, to take the ship into the Congo.

When you want to go any distance up the river, it will be necessary, whichever direction you come from, to keep close along the left or South bank; so that, coming from the North, you will have to cross the strength of the stream. We will explain how this is to be effected, so as not to be driven out to sea by the current.

Coming from the North, it will be sufficient, to enable you to cross the stream, to have a fresh and settled breeze from the S.W. or W.S.W. When we speak of out at sea, we suppose that you are 150 or 200 miles from the coast, at which distance it is said that the current from the Congo attains at certain periods a rate of 2 or 3 miles an hour.

It is not known at what distance this current, which usually has a N.W. or N.N.W. direction, becomes united with the Atlantic current, which sets along the coast from the Cape of Good Hope; but as the latter has a speed of not more than 24 or 26 miles in 24 hours, it is possible that the current of the Congo may be felt at a very great distance.

The second course for crossing the river in coming from the North, and the one generally taken, is to tack along the shore between Kabenda and Red Point, without leaving the bank of soundings. When you have made Red Point, then anchor, if you find you cannot make way. But if the sea breeze is favourable, you must calculate so as to get clear across the stream while this breeze lasts, and to reach the left bank of the river before it drops. So that even if you have reached Red Point, and are not sure of having time enough to cross the current, it will be much better to anchor somewhere off the point, and wait for the sea breeze next day, and then to weigh as soon as it is well set in; this breeze usually rises about 9 or 10 o'clock in the morning, and blows from the S.W. or W.S.W. till evening.

If you only want to proceed down to the coast to southwards, without entering the river, after you have got across the stream, you will keep on your course as long as you have a fresh sea breeze; and in case it is nearly ceasing when you have traversed the current, the better way will be to anchor to the S.W. of Cape Padrão, 3 or 4 miles out, according to the distance you have got from the mouth of the river, and there wait for the next day's sea breeze to carry you on along the coast southwards.

In this course you must steer in the following manner; on leaving the parallel of Red Point, at a distance of 9 miles from the point, set the head of the vessel on to Shark Point or Cape Padrão, as far as the parallel of Pirate's Creek. Here the streams set to the N.N.W., and it will be sufficient to coast along about 9 miles out to clear the Mona Mazea Bank in 10 or 11 fathoms, in which depth you should keep; the course will be about S. by E.

Then, when you get on a line with Pirate's Creek, or even before, according as you feel the force of the current greater or less, or a tendency in it to set towards the W.N.W. and West, bring the vessel up as if you intended to enter the river, steering right for the middle of the open space between Point Boolambemba and Shark Point. You will in this way get across the strongest part of the stream, and when you bear up for the left bank, haul your wind and steer so as to be carried on the South shore, till within 3 or 4 miles, and then anchor as you please.

If you want to enter the Congo, you must still anchor in the S.W. of Cape Padrão, and await the sea breeze to carry you in; unless you are in time to double Shark Point, and to anchor on the left bank to the East of this point.

You must never attempt to cross in the evening, for it is seldom that you would in this case have time to clear the main stream during the continuance of the sea breeze; and if it were to drop before you reach the left side, you would be inevitably carried out to sea.

Coming from the South, when you have sighted Cape Padrão, you may bring up 3 miles off, which may be done without danger. If you arrive at night, anchor to the S.W. of the cape, and wait till morning for the passage across. As soon as the sea breeze becomes settled, then weigh, and with the cape bearing E.N.E. or N.E. by E., you will be in the most advantageous course for clearing the stream. Keep this course till you begin to find yourself in the bed of the stream; then bring the cape to bear N.E. by N., or N.N.E., and keep the lead going, to be sure of the moment you get on to the Mona Mazea sands on the right bank.

When you are going to Kabenda, you must keep off the Mona Mazea Bank; and on leaving the Congo run out to sea for about 40 miles from its mouth, before you put the ship's head to the North, in order to avoid a bank which is not marked on the charts, and which, beginning at Red Point, extends 9 miles to the West of the point, running up to the North to join Point Palmas, the South point of the Bay of Kabenda. You must also take notice of the current which sets to the N.N.E. at the rate of 1 mile an hour, sometimes more, according to the strength of the wind.*

The chief markets and most populous places are a long way up the river, near the boundary of the kingdom of Embomma, the capital of which, called Banza Embomma, is situated on the right bank of the River Congo. On the same side, near the Falls of

---

* **Instructions sur la Côte d'Afrique, par M. Rouxo de Rosencoat.**

Yellala, is Inga; and further on, Condo-Yongo. On the left bank, going from the mouth, you find the villages of Pinda, Seenda, and Banza-Sonhio, on the Alligator River, which, they say, runs up to the town of Banza-Congo, or San Salvador, a place where the Portuguese formerly carried on a great trade. Alligator River is on the left bank of the Congo, about 11½ miles from Shark Point. The town of San Salvador is about 40 miles inland.

Proceeding further up the river, you come to the towns of Batta, Sundi, Condi, and Canga, near the left bank. The two latter are near the outlets of the Rivers Wambu and Lumini. The largest of these villages has barely 600 or 800 inhabitants, a number much less than stated by the French and Portuguese missionaries. The chiefs call themselves "chenoux;" the collectors of imports are "mafoux." The people in the higher parts of the river are mild, hospitable, and very lazy.

The brief directions for entering this river, as given by *Captain Vidal, R.N.*, are—"It is necessary to approach the river from the southward, and anchor near Point Padron, until the sea breeze sets in strong enough to stem the current round Shark's Point, and proceed up, keeping the southern shore aboard. Latitude of Shark's Point 6° 4′ 36″ S., lon. 12° 12′ 30″ E. Variation, 21° 42′ W."

REMARKS AND DIRECTIONS, BY THE FRENCH MISSIONARIES, IN 1773.

"CONGO RIVER forms a most impetuous current at its mouth; in order to cross over that current, when coming from the South towards Kabenda, you go along-shore, at 1½ or 2 leagues' distance, in 10 fathoms of water: the coast is low, and covered with woods.

"If you should happen to be on the South side of this current, and night coming on, you must come-to and anchor to the S.W. of Cape Padron, 1½ or 2 leagues off the coast, and wait till the breeze shall be formed next day; it would be hazardous to attempt the passage during the night. The breeze commonly begins at 9 or 10 o'clock, and blows from S.S.W. to W.S.W. You direct the head of the ship from E.N.E. to N.E., to encounter the current in the most advantageous manner, and keep it so till you begin to be in the bed or channel of the river, when you put the head to N.N.E., having a continual recourse to the lead. The water runs with such force in the middle of the channel, that it carries away the lead; and you would attempt in vain to moor, if you were overtaken there in a calm.

"When you are past this impetuous current, you find from 16 to 13 fathoms of water, and then must come nearer the land, approaching it within 1½ leagues; you are to keep in 6 and 8 fathoms, without ever coming under 5, from fear of some sandbanks, on which there are not more than 15 feet of water; besides, by keeping in the above depths, you find everywhere an even ground, where you can safely anchor in case of a calm. So soon as you can descry Kabenda Hills, you may steer N.E., provided you should keep always in the same ground.

"Within 4 or 5 leagues of Kabenda you may perceive the ships which lie in the Road, over a very low slip of land, which is called Palm trees Point: should you not be inclined to come immediately into the Road, the ships are to be brought E.S.E., and Palm trees Point S.S.W., and then you come to an anchor in 5 or 6 fathoms, oozy sand."

REMARKS ON THE ZAHIR, BY MR. GEORGE MAXWELL.

"VESSELS sailing out of Congo River should take Shark Point close on board, and, anchoring under it, supply themselves with fish, which they may do abundantly in a couple of hauls with the seine. But this coming to Shark Point should never be attempted till the sea breeze sets in, lest the irregular eddy current running off it should render the vessel ungovernable, and sweep her over on the Mona Mazea or N.W. shore, the bank of which should be approached no nearer than in 5 fathoms; and it is dangerous to anchor there when a heavy swell sets in about the full and change, the current running N.N.W. on the edge of that bank, at the rate of 7 miles per hour.

"Vessels intended for the Congo should be provided with a mooring chain, or chain cables; the water of that river having the quality of rotting cables in a short space of time.

"About six weeks after the commencement of the rainy season (that is, from the middle of December to the latter end of April), you find in the river 9 feet more water than the common depth; and it has a very rapid current, which brings along with it numbers of floating islands, some of them 100 yards in length, composed of fibrous roots, and covered with grass, which renders it very dangerous to vessels at anchor when tornadoes happen, which are also very frequent."

REMARKS FROM THE NARRATIVE OF CAPTAIN W. F. OWEN.

1825. Dec. 24.—" Entered the Congo, and for six successive days in vain attempted to stem its rapid stream; but on the 1st of January, 1826, the sea breeze being stronger than usual, we succeeded in passing Shark Point, where the current always runs with the greatest velocity, and in about thirty hours anchored at 25 miles from the southern entrance of the river. Here the Congo (Zahir) was not more than 1½ miles in width; and, at a short distance above, a broad sandbank divided the stream into two narrow but deep channels.

" The banks on each side above Shark Point are low and swampy, and covered principally with two different kinds of mangrove; the one a low grovelling bush, and the other a stately tree, resting on a forest of roots, upwards of 20 feet above the ground, the trunk often rising to the height of 100 more. Most of them are perfectly, and if the wood were a little lighter, they would be admirably, adapted for masts. The spaces between these lofty trees are filled up by a variety of smaller growth, but with beautiful and luxuriant foliage, among which are many of the palm kind.*

"The great body of water discharged by the Congo has scooped out a channel for itself, narrow, but immensely deep, above Shark Point, seldom more than a mile across, varying in depth from 200 to 45 fathoms. The great force of the current in the river is apparently but superficial, as when drifting out, during a calm, the vessel was so much retarded by the current below that the superficial one was running past apparently at the rate of 1½ miles in the hour, when its real velocity was about 4 miles.

" Many floating islands were seen coming down the river, formed of rushes, reeds, and long grass, and frequently covered with birds. Vessels are sometimes deceived by these, which occasionally drift a long way to seaward. The country at the mouth of the Congo is apparently very fertile, and presents many agreeable views; a range of high lands, covered with clusters of trees, extending some distance along its course.

"The people of Kabenda give the inhabitants of the mouth of the Congo a bad character for treachery and cruelty. They stated that whenever an opportunity offered for attacking a boat, either of Europeans or Africans, they would kill those who were likely to be unprofitable, and preserve the remainder for slaves, or to be ransomed. If they made any resistance, a death of torture was inflicted on them all; but if allowed to live, they were stripped naked, made to procure their own food in what manner they could, and kept at hard labour in the most servile duties. This character of these people was subsequently confirmed; while those inhabiting the shores at a few miles from the mouth were described, as Captain Tucker had found them, a harmless, inoffensive race."

DIRECTIONS BY CAPTAIN TUCKER, R.N.

The passage up may be made at all times of the day, with the flood tide, or against the ebb, if the sea breeze be strong enough. The best time for a stranger to make it is certainly with the first of the sea breeze; though, on taking H.M.S. *Wolverine* to the shoals a second time, I went up in the afternoon, and on the third time I went up in the evening, passing the lower shoals, and anchored, at 8^h p.m., close to a slave vessel lying between the two lower shoals.

The passage up should be made on and close to the left bank, until you arrive at the lower shoal, about 20 miles from the mouth of the river, where a spit with 2, 1¾, 1½, and 1 fathom on it runs off the left bank about a cable's length, which shows itself at low water, by the smoothness of the water on the lower part of it. From thence you should steer diagonally across the river, keeping her head well up, for a low, sandy, and green island on the right bank, keeping close to the lower edge of the lower shoal in 7, 8, and 9 fathoms until you arrive near the island, when you must steer up close to the right bank, carrying your lower studding sail booms over the bushes, having 6, 7, 8, 9, and 10 fathoms, except a small shoal with 4 fathoms, when you must edge off a little, so as to pass it about a vessel's breadth from the bank. Then you must steer along the bank again until you arrive off Punta da Linha, and anchor in 4 and 4½ fathoms, a mile above which the river is not navigable for vessels.

---

* See farther the copious description of the Congo, its Chiefs and People, in 1825-6, Owen, vol. ii., page 284.

The passage down is rather dangerous; but I think, by attention and prudence, it may be always made with safety. The usual passage down the river is crossing to the left bank above the shoals, and passing between them and the bank; but should only be attempted with a commanding sea breeze, with which, even, it is necessary to keep the ship's head well up the river, and allow the stream to set you gradually down until you gain the left bank; when you must drop down close to the bank in 4, 3½, and 3 fathoms, either by kedging or under sail; I prefer the latter.

The danger of crossing the river in coming down arises from the wind falling or lulling, and the vessel, in consequence (if not brought up very smartly with her anchor), being set by the stream upon the upper edge of the shoal; which has caused the total loss of many vessels, and the loss of rudder of many others. In light winds I should, therefore, recommend the vessel to be taken down by the sweeps, on the right bank, with the kedge ready to be dropped, and the boats down ready for towing, until you arrive on the lower edge of the lower shoal; when, if there be no sea breeze, it will be necessary to bring the vessel up with a bower anchor in 7, 8, or 9 fathoms, to avoid the shoal running along the right bank, over which the stream sets with great force. But if the sea breeze be commanding, you may cross over to the left bank by keeping the vessel's head well up the river until you get well over; when you may either back, or fill, or work down, standing from 4 fathoms on the left bank into not less than 7 fathoms on the right bank, until past Boolambemba Point and Spit, when you must not stand into less than 4 fathoms.

With respect to the shoal of 3½, 3¼ fathoms, on the *Mona Mazea Bank*, in the mouth of the river, which I have laid down, I am of opinion that it is of a very late formation, and will prove very dangerous to vessels crossing the river as I did. Steering well up the river from the southward to cross over to Cape Padron, carrying 7 and 8 fathoms, I suddenly got into 3½, 3¼ fathoms, along which I ran, carrying 7 and 6 fathoms on the port side, and 3½ and 3¼ fathoms on the starboard side, for about more than 3 ship's lengths.

I am of opinion that the whole of the Mona Mazea Bank is rising fast, from the deposit of mud out of the river, and from the sand thrown over by the heavy swell which often sets in upon it.

It is high water, at full and change, 4^h 30′; variation, one point and three-quarters.

REMARKS BY CAPTAIN E. H. BUTTERFIELD, R.N.

"The depth of water in the Congo differs very much from the soundings laid in the chart of that river, and several banks exist which are not laid down at all; but we had no opportunity of surveying them. The water in the stream, in 14 fathoms, is very good; the tide running from 6 to 7 knots. In 5 fathoms, near the shore, where we anchored to procure wood, the water was brackish, and the anchor brought up a mass of putrid leaves, as black as ink.* We cut wood in forty-eight hours sufficient to last three months; and found the natives very anxious to trade, either in slaves or ivory.

"I would recommend no one entering the Congo until the sea breeze sets in strong. The *Fantome*, going 5 knots, was completely turned round two or three times; and great care must be taken to keep on the South shore, as the tide sets directly on the Mona Mazea Bank, and, at such a rapid rate, a ship is almost unmanageable with any wind. In coming down the river (in December we found the water 8 feet deeper than in July), keeping well over on the South shore, we were set directly out of the river. We came down with a 1 knot breeze, the tide running 5 and 6 knots. On the South side of the stream the current appears to set about W. by S., *true*, and to the northward of it about *N.* by *W.*, *true*.

"The climate is so fine, that the natives' huts are generally built without roofs. The *Fantome* has been on this station since June; and we have never experienced rain to last one hour, nor any, more than six days, between that time and December 31st, 1840. The thermometer generally in June, July, August, and September, was 70°, and in November and December, 80° to 82°."

---

* See "Climate," &c., page 366.

GENERAL REMARKS AND INSTRUCTIONS ON THE NAVIGATION BETWEEN BIAFRA AND CONGO.

The navigation between the Bight of Biafra and Congo seems to have been very imperfectly understood, owing to a general ignorance of the setting of the currents and local circumstances. The currents of the Bight are clearly variable. On the East of the islands the stream has been described as setting to the South; while at Prince's Island a north-westerly current on the East, and a more northerly current on the West, are occasionally found. A northerly current is also described as prevailing on the coast, all the way from Cape Negro, in 16° South. The following extracts from the Narrative of Captain Tuckey's Voyage will show the necessity of keeping clear of the Bight, and attempting a more direct passage from the West, when bound to the coast of Congo, &c.

On the expedition to the River Zahir, the ship *Congo* had Prince's Island in sight, 16th May, 1816, at the distance of 12 or 14 leagues. From the spot whence the island bore *S.E. by S.*, *true*, at that distance, the ship, with light airs from the South to S.W., attempted a southerly course, but a strong current setting to the northward impeded it. On the 19th, at daylight, St. Thomas's was seen, bearing *S. by W.*, *true*, 12 or 14 leagues. The island was in sight for two days, the ship making scarcely any way to the southward: she then stood to the westward; but wind and current still continued unfavourable, and she did not succeed in getting to the southward of St. Thomas's until the 27th, having been obliged to stand to the westward as far as the meridian of 4° East, and at length passed only about 4 leagues to the southward of the island. Observations here gave for the position of the Isle Rolas, the Equator, and longitude about 6° 45′.

The ship continued working to the southward, taking every advantage of the wind, and frequently trying for soundings, without obtaining them, until the 3rd of June, when at noon 17½ fathoms were found, with greenish ooze. Here the coast was seen; the latitude 2° 10′ S., computed longitude 9° 29′ E.* The land was about 4 leagues to the eastward. The weather was hazy, so that no remarks on the coast could be made. It was, however, inferred that the bank of soundings here does not extend farther off than 10 leagues. At 10 or 12 miles off-shore were 18 fathoms, with greenish ooze; thence *S.W. ½ W.*, *true*, 5 miles, 30 fathoms, coarse sand; thence *S.W.*, *true*, 3 miles, 47 fathoms, sand and broken shells; thence *S.W. by W.*, *true*, 4 miles, 67 fathoms, same bottom; and thence *S.W. by W. ½ W.*, *true*, 4 miles, no bottom with 100 fathoms.

From the 5th of June the *Congo* continued to work out of soundings, but making very little way to the southward, until noon of the 17th, when she gained the latitude of 3° 12′. Running hence *E. ½ S.*, *true*, 12 miles, soundings were gained in 66 fathoms, coarse brown sand, with red specks.

On the 25th of June, at noon, the ship had gained no more to the southward than to 3° 49′ South. On the 26th, to 4° 8′. On the 28th she was in 4° 24′. Some observations on the coast were now made; but they are too inaccurate for admission. On the 1st of July the ship was off the South point of the River Louisa-Loango, then bearing *E.N.E. ½ E.*, *true*, 7 or 8 miles. The current here ran N. by W. about three-quarters of a mile hourly. On the 7th the ship had arrived in the Zahir.

Captain Dalzel's Directions state, that vessels sailing from Cape Lopez to Kabenda or to Congo River are continually tacking and veering, being obliged every evening to come to an anchor. The practice is, in the morning, so soon as daylight, to put off, and keep to seaward till 11ʰ or 12ʰ, when the wind is South or S.E., and also when it is still. If then it does not change, a vessel loses ground, although in 80 fathoms of water. In this case, get up again with anchors; but when you come below anchoring ground, you cannot gain the river; and it would even be very difficult to pass by the entrance of Kacongo River, as the current sets there most part of the year to the N.W. and N.N.W.; and though, from March to September, when the S.S.E. winds are blowing, the currents may run toward the S.W. by S., yet it is advisable to keep off as before, and even farther; the sea, during that time, falls with a greater violence against the shore than at other seasons of the year.

Captain Matson says:—To cross the stream of the River Congo from the northward, it is requisite either to go 200 miles off-shore, or to keep in anchoring ground. I always choose the latter. If you are not certain of getting across the stream before the sea breeze dies away, anchor on the Mona Mazea Bank, in 6 or 7 fathoms, until the following day, when a two hours' sea breeze will take you to the southward of Shark's Point, and you are then out of the influence of the stream, which always runs to the N.N.W."

---

* This must be the low coast to the southward of Cape St. Catharine, which we now place in lon. 9° 23′.

Along this coast, between Cape Lopez and River Congo (says Pimentel), it is not fit to sail but in the morning: so soon as the wind comes from the South toward the land, you go to seaward for twelve hours; and if it does not change, come back again to the shore, where almost everywhere you will have 8 or 10 fathoms of water. As the current all along runs much to leeward, N.W. and W.N.W., should you perceive it setting to the S.W., the best way is to take a trip to sea two hours before daylight, and then to return and anchor near the land: any other method would make it very difficult for passing the River Congo. The current being to leeward, when you turn about to sea, with the wind at West or W. by S., and your ship halfway, it is advisable you should come back to the land, to anchor in 10 or 12 fathoms, oozy ground, which you will find in all this part; and if the wind should happen to blow from the S.W., you are to turn toward the sea.

The coast from Cape Padrão to the River Dandé is about 156 miles. The coast, of moderate elevation in general, is nevertheless higher than that we have thus far described. It also becomes more rocky at its base, and in some places it presents reddish cliffs, surmounted further inland, and chiefly towards the South by a second line of hills. The line of soundings, 2 or 3 miles out, is also less regular; but still the coast is generally safe. It is sometimes wooded, sometimes with naked hills, merely capped with isolated clumps of trees. This is its general aspect.*

From Cape Padrão to Cape Engano, or *Deceit*, the coast runs S. ¾ E. for 21 miles, nearly in a straight line. We have described Cape Padrão, as seen from the North, and remarked the rose-coloured or reddish cliff which distinguishes it. When seen from the West, it presents rounded undulations; the summit of the hills being covered with a poor and stunted vegetation. After doubling Cape Padráo, the cliff disappears, and is replaced by a low coast, gently undulating, on the top of which in some places are some very straight lines, and here and there tufts of brushwood. When you get 3 miles to the South of the cape, it looks low, and slightly projecting, Some bright red cliffs are seen hereabouts, tolerably high, and continuing for a long distance without any break. They show very little vegetation. Shortly after, the coast changes in appearance, and becomes arid, rather high, and retreating from the shore; here and there are seen red cliffs. The steppes which form these hills are marked by lines of trees and brushwood, and are sufficiently high to be easily recognized. They are called the *Barreiras Vermelhas*. Along this part of the coast the sea is generally very rough.

Cape Engano, or Enganador (Deceit or Deceiver), presents nothing remarkable; it is slightly prominent, and to the East is seen a small conical hill. The red colour of the cliff which forms it has no doubt been the cause of its being mistaken for Cape Padrão; and to this perhaps it owes its name.

From Cape Engano the coast curves inwards gently, and forms a bay, the South point of which is called *Margate Bluff*. This point, situated 9 miles from Cape Engano, is projecting, of a round form, rocky at its base, and crowned by a tolerably high hill. It is 30 miles distant from Cape Padrão. At Margate Bluff commences the high land which continues southward as far as the Bay of Funta, a distance of 30 miles.

Margate Bluff is the North point of another bay, with a sandy beach, and showing near the middle of it a rocky headland, which terminates towards the South, in a rather high point, distinguishable by a clump of trees of a dark green, in lat. 6° 39′ S., lon. 12° 28′ E., called *Mangal-Grande*. It is 1 mile North of the South point of the bay, and marks the entrance of a small river, which runs amongst the small hills near the shore. The South point of the mouth of the river, which is also the South point of the bay, shows some lofty cliffs, pointed at top, with their summits covered with shrubs, and overtopped again by a mountain, the top of which is gently rounded and bare. This point is called *Mangal-Grande Point*. It is 37 miles from Cape Padrão.

---

* There is some confusion in the nomenclature of this coast arising from the imperfection of the older charts. M. de Kerhallet, from whose work we have taken much of the subsequent *description*, has, by comparison of numerous authors, settled on the arrangement which has *been partly* followed hereafter.

From Point Mangal-Grande to the North point of the *Bay of Funta*, in lat. 6° 56′ 30″ S., lon. 12° 43′ 52″, is 22½ miles. The coast trends to the S.S.E., presenting, for a distance of 16½ miles, an uninterrupted sandy beach. Behind this beach may be remarked here and there some rocky cliffs almost perpendicular, overtopped by some rounded hills, and almost bare of vegetation; 6¼ miles North of the Bay of Funta the sandy beach is interrupted for some miles, and the cliffs come down to the water's edge; but soon after the sandy beach reappears, and continues as far as the North point of the Bay of Funta, to the East of which runs the River Lelunda.

The Bay of Funta is at the mouth of the River Lelunda. It is 4 miles wide between its two points, both of which are low and sandy, the cliffs not appearing again till you get 4 miles South of the South point of the bay. The bay is not deep, and affords no shelter, being open to the S.W., and thus exposed to the winds from seaward. A reef runs out from its North point 3 miles southward, and must be carefully avoided when approaching from the North. You can anchor off the bay in 7 fathoms, with the entrance of the Lelunda bearing N.E. ¼ N., 5 miles distant. You may also anchor 8 miles off, the river bearing S.E. by E.

The mouth of the *Lelunda River* is indicated by some clumps of trees growing close to the beach, beyond which, to the South, are some cliffs and isolated trees. On the left bank of the river, 4 or 5 miles inland, are some trading huts, and the bay is notorious for its slave traffic. Several slave ships have been captured in it.

From the South point of Funta Bay the coast runs, with a slight curve, to the S. by W., as far as the entrance of the River Couza or Cousa, which is 12 miles from the point. The beach is sandy for about 5 miles, and then the low rocky cliffs reappear as far as the Cousa. Four miles South of Funta Bay, above the scattered downs on the shore, which presents no longer that level surface which gave it the appearance of a red wall, you will see a rather high mountain, crowned at top with some low trees; it is called *Funta Mount.*

This hill stands a little inland, behind the land above the rugged cliffs of the coast, which lie behind the sandy beach. It is the last prominent hill rising above the line of coast, which becomes generally low, and remains so as far the River Cousa. It presents a continuation of cliffs of uniform height, intersected here and there by what appear to be the outlets of torrents or ravines among the round-topped hills. Seen from 5 or 6 miles out at sea, these cliffs appear of a yellowish colour, almost like ochre, and sometimes reddish, when they look clear. They contrast strongly with the blue tint of the sea, and with the green level of the country behind them.

River Cousa or Couza.—The entrance of the river may easily be distinguished by the tall trees about it, and by a gap in the cliffs we have been speaking of. To the South of the river, these cliffs reappear, but less elevated, and their summit is flat. The loftiest trees are on the point of the right bank of the river, called *Point Palmas*, and their dark hue stands out strongly against the yellowish tint of the cliffs on the left bank. The South point of the entrance is skirted by a small bank, which runs 1¼ miles out. To the East of the entrance is a group of hills, the highest and most southern of which is called *Cousa Hill.*

On the level land are some very thick clumps of trees, among which you may distinguish a village. Close to the sea there is an isolated hut upon the cliff, and behind this again some large trading huts.

At 5 miles South of the North point of the mouth of the River Cousa is *Cape Juma*, or *Foreland Bluff.* The coast between is formed of cliffs, rising gradually. Foreland Bluff is itself formed of a high cliff, projecting seawards when seen from the South, but appearing less prominent from the North or West. The top of this cliff is covered with stunted herbage.

THE KINGDOM OF ANGOLA.

This country is a Portuguese possession. It is so by right of discovery in 1485, by their christianising it in 1491, and by re-conquest in 1569. At the first named period, Diogo Cam, sent by King João II. of Portugal, discovered and explored the Zaire, erecting the pillar (padrão) on its South bank. In the following year, after quitting the Congo he went as far South as Cape Negro, planting two other columns, as hereafter noticed.

The name is perhaps derived from that of the native conqueror under the Portuguese commander, Francisco de Govea, in 1569, *An-Gola*, the son of the Jaga of Matamba, Gola-Zinga.

On the Atlantic Coast it extends from the *Rio Ambriz*, or *Embrige*, or *Rio dos Ambres*[*] (amber or copal), to the *Cuanza River*, which separates it from Benguella. Toward the interior, it reaches to the countries of the *Molluas*, *Jaga-Cassange*, and *Dala Quiçua*. According to the approximate estimate, in the work of J. José de Lima, the total population of this kingdom was 246,009, of whom 1,740 only were white, including 154 women. The further particulars of the population will be given in the notice of Benguella hereafter. The country is necessarily very varied in its aspect. The features of the coast will be subsequently described. The productions are cotton, sugar-cane, indigo, rice, coffee, cocoanuts, castor oil-seeds (vulgo, carrapateira), gum copal (called *mucocolo*), tamarinds, tobacco, urzella[†] of Angola. The kingdom of Angola is politically divided by the Portuguese into six presidios and four districtos, the capital being S. Paulo da Assumpção de Loanda.

NATIVES.—The natives of LOANGO, MALEMBA, KABENDA, CONGO, and AMBRIZ have been described by Captain Adams as having one uniform character and appearance; their skins are black and shining; few of them are to be found above the middle stature, and the majority are below it; in fact, they may be considered as a diminutive people, when compared with the natives of Africa North of the Equator. Their countenances are cheerful, placid, and unreflecting; their manners soft and effeminate; and their muscles small and flaccid, seldom exhibiting the appearance of being enlarged and hardened by labour, or possessing that smooth plumpness which ease and plenty usually produce. Their operations in husbandry are extremely limited, and the edible vegetable which they most cultivate is the manioc, or sweet cassava, to which may be added a small quantity of maize, calavancies, and yams; and even when they have obtained these, they are often too idle to prepare them in a proper manner by any culinary process, so as to render them nutritious aliment; in consequence of which their digestive organs are much weakened, and they suffer much from worms, particularly of the tænia species.

Should the season prove unfruitful, and the plantain tree (the bread fruit tree of Africa) not yield its usual abundance of fruit, on which they chiefly depend for subsistence, the natives of Angola are reduced to extreme want, and feel the effects of a famine, which a little industry would have prevented; for at no time is there a superfluity of provisions for sale, though the soil is fertile, and the climate in many parts very superior to any North of the Equator.[‡]

CAPE JUMA, or FORELAND BLUFF, is the North point of the bay of the same name. Behind and beyond the land above the cliffs is a group of hills, the southernmost of which, of a table form, called the Table of Juma, is the highest, and is the best mark for the Cape and Bay of Juma.

The table-land of Juma may always be easily recognized from whatever direction you approach it; 25 miles off it always has the same appearance. South of Cape Juma the coast curves inwards gently, to form the *Bay of Juma*. This bay is 5 miles wide between its two points, and is rather a mere indentation of the coast than a bay. From Cape Juma the cliffs continue to be seen, for a distance of 3 miles; they are lofty, peaked, and so little broken on their face that they might be taken for a great white wall, were it not for some slight fissures on the very top of them. To these cliffs succeeds a fine sandy beach, extending as far as the South point of the bay, on which may be seen numerous canoes drawn up high and dry.

AMBRIZETTE.—The factory station of Ambrizette is a little North of this sandy beach, at the foot of the Table of Juma, to the S.W. of this hill. The Portuguese factory is likewise on the right bank of the River Ambriz, which falls into the Bay of Juma, at the North part of it. The river appears to run eastward, and is a quarter of a mile wide near its mouth, which is barred by sand, like almost all the rivers on this part of the coast.

---

[*] The limit of Angola to the North has been placed formerly at the little river Lifune (or Onzo); but the interior possessions do not accord with this limit, and therefore it is placed at the Ambriz River, as stated above.—See J. J. de Lima's Ensaio, &c., livro iii., parte i., capit. i.

[†] This plant was first discovered in 1835, and in 1838 the first bales were imported into Lisbon. In 1845, above 8,000 quintals were exported. This urzella differs entirely in its nature from the lichen rocella and orchilla of the Cape Verdes and Canary Islands. That from Angola is a parasitical plant, growing on and destroying the trees.

[‡] For merchandize suitable to barter with, for a small cargo of ivory or barwood, see *Captain Adams*, p. 115.

You can anchor in the Bay of Juma, with the table land of Juma bearing E. by N., 5 miles from land, in 9 fathoms, sand and gravel; or on the same bearing in 6 fathoms, 3 miles from shore.

On the parallel of the River Cousa, 9 or 10 miles out, you find 25 fathoms, bottom of muddy sand; at 18 or 20 miles, 40 fathoms, sand and coral bottom.

The neighbourhood of the Bay of Juma abounds in fish. The best depth for fishing is in 18 fathoms, gravel and coral bottom. In 4, 6, or 9 fathoms, muddy bottom, you find no fish.

From the South point of the Bay of Juma the coast runs S. ¼ W. for 14 miles, as far as the point called Double Headed Cliff. For this distance the shore is throughout of white cliffs, high, and slightly undulating, forming at their foot numerous points, between which are small bays. Trees crown their summit; and in the second range there is, farther inland, a range of still higher hills, running parallel with the shore.

Double Headed Cliff is a point projecting slightly, and only recognizable by some heights lying back in the interior, and near to it is the North point of a very small bay, along which the cliffs are very low; but they rise again high and abrupt at the South point of the bay, on which a cross is erected. This point is one of the most distinguishable on the Congo coast, by the hills which are seen a little to the South of it, and which serve as a mark for the shore, and the villages of Ambrizette, in the neighbourhood. These heights, called the *Aravat Mounts*, run 5 or 6 miles nearly parallel with the shore; they are rocky, steep, and have no vegetation but some brushwood. They are of a basaltic nature. On the summit of the most northerly of them is a high peak of basalt, which is very conspicuous. More to the South, another rock has a fancied resemblance to the shape of the celebrated hat of the Emperor Napoleon. The slope of these hills towards the shore is very gentle, and it reaches it with undulations, in the hollow parts of which, in the midst of the trees, some huts are discernible. The neighbourhood of the hills appears to be thickly populated.

Six miles South of Double Headed Cliff is the North point of the Ambrizette shore. Between the two points the coast is everywhere of whitish cliffs, terminating at the very point of Ambrizette. A sandy beach succeeds, and forms some slight indentations, which are improperly called the Bay of Ambrizette. This beach extends for 4 miles, and ends 2 miles to the North of a small river, called Rio Doce, situated 10 miles in a straight line from the peak of the Aravat Hills.

In the East of Point Ambrizette, a short distance from the shore, and on the South slope of the Aravat Hills, stands the principal village of Ambrizette, and some large barracoons or factories belonging to the Portuguese; another village and some barracoons are found more to the South, opposite the sandy beach. This one is in lat. 7° 44′ S., lon. 13° 1′, according to M. Kerhallet. The southernmost of these villages stands near the end of the sandy beach of Ambrizette, 2 miles from the mouth of the Rio Doce. This village, the houses of which are of a conical form, is very striking, by its colour being brighter than the dark green of the trees which overhang it. The land hereabouts is of a yellow hue, and contrasts strongly with the green country which is seen South of the mouth of the Rio Doce.

The RIO DOCE (or Loze, or *Loge*) is an apparently insignificant watercourse, and appears partially barred by sands. The North point of its entrance is low and very woody; and the wood which renders it most striking is of a very dark green colour. Above the wood some undulating hills are visible.

The South point of the entrance is high, and formed by a whitish cliff, which is surmounted by a green plateau. It is perpendicular; and on the summit are two palm trees, from which it takes the name of *Cape Palmas* or *Bosquet*. It seems that these trees have been there a long time, for we find a similar name for this point on the charts ever since 1790, and the palm trees are also marked on them; on these charts it is called Point du Bosquet, or Grove Point. The entrance of the river is called by the Portuguese the *Porto de Sangano*.

The Rio Doce is very narrow at its entrance, and it seems to wind in a N.E. direction to the foot of the hills of which we have spoken.

The cliff, which forms Cape Palmas, is scarcely a mile in extent, and then the coast becomes sandy as far as the mouth of the River Loze, improperly called by Europeans, as M. Kerhallet says, the River Ambriz, which lies 5 miles from Cape Palmas.

The **RIVER AMBRIZ,*** which lies at the bottom of the bay of the same name, may be recognised by the brighter green colour of the trees around its mouth; the trees are also loftier. This watercourse, formerly rather considerable, is now unimportant, and will scarcely admit small boats.

The North point of the Bay of Ambriz is low, sandy, and skirted by a bank on which the sea always breaks. It is called North Breakers Point, or Point Loze. You should always give this point a berth of 2 miles, in order to escape the sandbank. It lies 3 miles N.N.W. ¾ W. of the mouth of the river Ambriz.

The South point of the Bay of Ambriz, 4 miles distant from the preceding, is called *Strong Tide Corner.* It is a high, perpendicular cliff, of a whitish colour, and on its summit are some European factories; it has also some shrubs on its summit.

You must keep 3 miles to the West of this point, in order to avoid the bank which runs round it 2 miles out to the West, and on which the sea usually breaks very strongly. This same bank extends North of the point 2 miles out, and in some measure closes in the Bay of Ambriz on this side. Even very small vessels cannot moor on the East of this bank, on which there are 3½ and 4½ fathoms of water.

On leaving Strong Tide Corner and proceeding to the North, the bay runs in slightly, and shows a fine sandy beach as far as the River Doce. The shore is covered with tall trees and verdure. Above this line is discovered, some distance inland, a chain of hills running E.N.E., which appears to be a ramification of some more distant mountains running North and South. They appear to be of granitic formation, and are dotted here and there with scanty herbage and stunted shrubs. The Ambriz runs at the foot of these hills; the scenery on its banks is very grand. Numerous villages occupy the gentle slopes down to the river, the most remarkable and important being named *Kora, Kouanda, Kiverna, Baram-Poutou, Bonga-Bonga, Moundelé, Goundou, Vinda, Jouanna, Efouni, Kassi, Gombé, Antonio-Nasso, Serné, Embé,* and *Foula-Baman.* The River Ambriz, above the bar which encloses it entirely, is tolerably deep, and has 12 feet water; it is navigable nearly to its source.

Coming from the North, in order to make this anchorage, you must round Point Loze, or Breakers, at a distance of 2 miles, and then cast anchor in 8 fathoms of water, with the factories on Strong Tide Corner bearing S.E., and the mouth of the river East. Coming from the South, you must round Strong Tide Corner at a distance of 3 miles, and then proceed northward until you have the bearings as above, so as to avoid the bank around this point. The winds are generally from S. to S.W.; the current sets to the N.N.W. at the rate of 1 mile an hour. At this anchorage you have alternate land and sea breezes; and the roll of the sea being from the S.W., the vessel often gets across it, and consequently labours a good deal.

---

* Respecting the nomenclature which M. de Kerhallet adopts on this coast, differing, as was before stated, from that lately in usage, the following note in the Manuel de la Navigation, &c., p. 135, will explain the variations which it is necessary to notice here.

"We here replace the correct names, to avoid the confusion which navigators have caused on this part of the coast, to which is owing a number of errors and mistakes.

"The River Ambriz falls into the Bay of Juma. The factories of Ambrizette are on this river.

"The River Loze falls into the Bay of Loze; there is no village of the name of Ambriz in the Bay of Loze; there are only the European factories.

"Lastly, the villages of Ambrizette are situated 26 miles to the South of the factory of that name, between it and the Bay of Loze."

In referring to the map drawn up by Capt. J. J. de Lima in 1846, to accompany his work on these Portuguese colonies, we find that the details, though somewhat imperfectly delineated, will accord with *previous* names, if our views are correct; thus, a few miles to the North of the River Ambriz, or Dos Ambres, in or about lat. 7° 40′, we find the Rio *Loge* marked as falling into the Porto de Sangano, and no notice taken of the Rio Doce, whose place it occupies. Therefore, presuming that Loge or Loze, which would be pronounced nearly alike, is but a corruption of Doce, we have retained the previous nomenclature, considering these latter names as identical.—*Ed.*

The word *Ambriz,* or, as the river is called by Pimentel, *Dos Ambres,* may be derived from the copal gum resembling *amber,* abundant here.

In order to land, you must first make for the entrance of the river, to within 100 yards of the shore; you must then run along shore to the foot of the cliff which forms Strong Tide Corner, where landing is easiest. It is always wise to do this, because, on the bank to the North of Strong Tide Corner, although from 21 feet to 26 feet are found on it, there is sometimes a swell heavy enough to capsize or swamp a small boat; and during the rollers, which frequently set in, the sea breaks on the bank throughout its whole exent. At the anchorage in 7 fathoms, on the parallel of the entrance of the river, the waves begin to break at the distance of one-third of a mile to the East of the anchorage. As you proceed North of the parallel of the entrance of the River Ambriz, you can approach nearer to the land; and ships can anchor even in 20 feet, but it is dangerous, and the swell is then very strong.

During heavy rollers you cannot communicate at all with the shore; when they are less violent, landing may be effected by passing between the breakers on Strong Tide Corner and the shore. At the foot of the point the sea does not break, but a canoe is indispensable even then for landing, on account of the surf, which is very strong.

East of the high land which forms Strong Tide Corner there is an immense marsh, extending several leagues inland, on both sides the River Ambriz, which becomes navigable after passing this swamp. It renders the Bay of Ambriz very unhealthy, through its dryness in the fine season, and the mists which arise from it during the season of tornadoes. The sea reaches it at spring tides, and it abounds in fish. Sea birds also collect there in vast numbers.

By night the coast is covered with a thick fog, which fills the lower strata of the atmosphere, leaving the sky perfectly clear. The dews are abundant, and the East wind is comparatively very cold.

At the anchorage in Ambriz Bay there is no fishing; you must go 12 miles out for that; but in the morning you may fish with the net at the mouth of the river. Fresh provisions may be obtained, being brought down by the negroes of the interior. There is no village on the bay itself. The lawful trade consists in ivory, skins, wax, gum-copal, and some small quantity of copper ore. The illicit trade, and the most profitable, is that in slaves.

There are in Ambriz Bay two English, one American, and one French factory; they are built on the land which overhangs Strong Tide Corner. The Portuguese factories are in the interior, near a village in which the king lives.

The Bay of Ambriz is very much frequented, especially by slavers, and the factories hereabouts are the most important on the coast; although they have been burnt once by the English cruisers, they have been rebuilt on the same spots. The trading huts are situated in the interior, and concealed in the woods; from these the slaves are transferred to others along the coast. In Ambriz Bay the trade is carried on on a large scale, and immense capital is embarked in it. Each factory communicates with its subordinates by means of signals, which are exchanged as rapidly as by the telegraph. In this way they make it known along a great extent of coast, whether or not there are any cruisers near, the course the cruisers are taking, what direction they come from, and which way they are going; so that the repression of the trade is rendered immensely difficult.

Quitunga, or Little Masula Road, is S. ½ E. 10 miles distant from Ambriz The *Little River Masula* (or *Mossul*) enters the head of the Bay, which is not more than half a mile wide between its two rocky points.

The village of Little Masula lies on a patch of land which surmounts the cliffs of the coast. You can anchor before it in 7 or 8 fathoms.

Mount Bamba, which appears quite separated from the other hills, when bearing East, is a hill of rounded form at the top, and with sloping sides, 3 miles N.N.E. of Little Masula. The land on the coast is parched, and bears only a few clumps of trees.

MAZULA BAY, or GREAT MASULA BAY, is 14 miles South of the former. The *River Onzo* (or *Lifune*) falls into the latter Bay. On the left bank of the River Onzo stands the village of Mossul, or Great Mazula, visible from the sea, and having some American factories.* Between the Bays of Little and Great Mazula the coast is everywhere formed of white perpendicular cliffs, of uniform height, only cleft at the top in some places. A rocky reef stretches a mile off-shore, between the bays. The coast between the two bays presents a very remarkable appearance; it is, as we have just said, a line of precipitous cliffs, stretching South to the entrance of the River Onzo, the mouth of which is indicated by a deep fissure, the cliffs shelving down on each side, and by a mass of dark verdure which fills the fissure. Above the cliffs, the whole length of the coast between the two bays, there is a line of hills, some rounded and some pointed at top. They form two chains; the first, parallel to the shore and close to it, is called for distinction the *Seven Hills*; the second, 10 or 11 miles back in the interior, is more peaked, and has the name of the *Masula Hills*. These hills form an excellent landmark.

---

* Mossul, or Masula, or Mazula, gives a title to a Portuguese marquis. The Marquez do Mossul is lord over the country between the Rio Loge (or Doce) to the North, and the Rio Lifune to the South. J. J. de Lima, Ensaiao, and Livro III. parte ii., p. 22.

The *River Lusina* is 8 miles S.S.E. of Mazula. The cliffs between these two rivers are still perpendicular. The land at the top is wooded.* The mouth of the Lusina is distinguishable by masses of tall and beautiful trees, which line the shore for a short distance. It is easily discernible by these high trees, the hue of which contrasts strongly with the red colour of the land, and of the hills in the background.

DANDÉ.—The North point of the mouth of the River Lusina is the North point of the *Bay of Dandé*; its South point is called *Cape Dandé*. It lies S.W. by S. of the former, at a distance of 8 miles. Between the North and South points of Dandé Bay the shore is sandy. The bay forms two unequal indentations, quite distinct, and separated from each other by a high rocky point, 3 miles from Cape Dandé. Seen from the W.S.W., this intermediate point appears perpendicular. Above the sandy beach rises a line of hillocks, and trees fill the hollows of the land. The Mazula hills are seen quite behind, 11 miles in the interior.

CAPE DANDÉ, the South point of the bay, is formed of a perpendicular cliff, lofty, flat, and barren at its summit. It descends perpendicularly to its base, which slopes down in an inclined plane. This headland is very prominent and bold, especially when seen from the W.S.W. From Cape Dandé the cliffs continue eastward for 3 miles, in the inner part of the Bay, and then from the left bank of the river of the same name, which is indicated at its entrance by trees and mangroves. The river is quite at the South part of the Bay of Dandé, and the precipitous cliff which marks its left bank is spotted white and red.

The *River Dandé* is said to be navigable by good sized vessels, even for some distance above the town of the same name, which is situated 4 miles up on the left bank. This town, the first Portuguese establishment in the North, is an old station, which formerly had a great trade with the Brazils and the Portuguese Islands. It still has an active trade.

You can anchor in Dandé Bay, N.N.W. of the mouth of the river, in 10 fathoms, and along the shore at the bottom of the bay, in 9 fathoms, 2½ miles from the land. The bay is perfectly safe in these soundings, and no danger is known near the shore. N.W. of Cape Dandé there are 12 fathoms, 1½ miles distant. The River Dandé is the South boundary of the Province of Masula.

Cape Spilimberta, of the old charts, is a rounded promontory, 8 miles S. ¾ W. from Cape Dandé, the coast between them consisting of high red and white cliffs. From hence the coast trends S. by E. ½ E. 6 miles, still formed of cliffs, to the commencement of the sandy beach of the Bay of Bengo.

BENGO BAY, or BANGO BAY, is the largest indentation of the coast between Great Fish Bay and Cape Lozez. It is bounded by Cape Spilimberta and Cape Lagostas, N.E. ¼ N., and S.W. ¼ S., 10 miles apart. In the North part of the bay the land is low and without verdure, presenting the same appearance so frequent to the South of this.

The RIVER BENGO debouches at the head of the bay, at 7 miles East of Cape Lagostas. It is indicated by some trees on the beach, and to the East of it rises a high hill. To the West of it, 3 miles off, is a large building, surrounded by houses; it is an establishment inhabited by Portuguese, from which the markets of Sto. Paul de Loanda derives its chief provisions.

The bay is much frequented by shipping, who anchor here to learn the state of affairs at the capital before proceeding there, and thus avoid the anchorage dues of that port, which are very high. The soundings in the bay diminish gradually toward the shore, being deepest on the South side. In approaching it from the North, keep Cape Lagostas half a point or a point to the East of South, to avoid the great bank extending to the N.E. of Loanda Island. In coming from the West, you must keep 3½ miles of Cape Lagostas, and bear to the North until Fort San Pedro, to the South of the cape, is in one with a country house (quinta), very conspicuous on thet op of the cliff, bearing South, when you will have doubled the extremity of the reef off Loanda Island, and you may then proceed for the anchorage in the bay. The same directions also answer in coming from the South. You can anchor with Cape Lagostas bearing S.W., 4 miles distant, and the large building at the bottom of the bay South, in 14 fathoms; or you may do so within a mile of the Cape in 16 fathoms; or farther in the bay to the North of the large building, in 7 or 7½ fathoms. This anchorage is useful to a ship which is proceeding to St. Paul when overtaken by night, or during a calm. The bay is clean throughout.

---

* In the charts of Captain de Lima there is a mine of petroleum marked in the space between the Lifune and the Dandé Rivers.

CAPE LAGOSTAS (Lobster's Cape) is the S.W. point of Bengo Bay. It is easily known, being a perpendicular cliff of a yellow colour, and crowned with bushes. A mass of black and sharp rocks lie around its base. It is, however, quite safe, and therefore is the best side on which to approach St. Paul de Loanda.

PORTO DE LOANDA.—At 1¼ miles South of Cape Lagostas is the Fort of San Pedro (or Fortaleza de San Pedro do Morro da Cassandama), cut in the cliff itself, and some yards above the sea. Its walls are of a reddish colour, and it presents a formidable double tier of artillery.

"The port is formed by a low, narrow, and sandy island, 6¼ miles in length, from N.E. to S.W., which forms a bay with the coast on which the city is situated. The distance between is about 1½ miles, and the water shoal, some parts being dry at low water, with spring tides. On the island are several villages. From its North end a hard sandy reef, nearly half a mile broad, extends 2 miles E.N.E. [*N.E.*], and upon a great part of which are only 12 feet of water. Cape Lagostas S.E. by E. leads just clear of its North end, in from 17 to 20 fathoms; and Bengo Point (*low*), a little open to the left of the Cape, bearing S. 36° E., leads nearly a mile to the N.E. of the reef and to the opening of the harbour. The situation of a pole on the North end of Loando Isle, as determined by the officers of H.M.S. *Leven*, in 1825, is lat. 8° 46′ 12″, lon. 13° 9′ 18″. Variation, 22° W. High water in the port, on the full and change, at 4^{h} 20′; rise, 5 feet.

From Cape Lagostas the coast rounds half a league to the S.W., where stand *Fort San Pedro* before mentioned, and a cenotaph. From this the coast concaves to the S.W. 4½ miles, to *Fort San Miguel*, which stands on the West of the town, and may be considered as the citadel. The depths in the harbour, to the distance of half a league from Fort San Miguel, are 17, 16, 14, to 11 fathoms, whence they suddenly shoalen to 12 and 6 feet of water.

From Dandé to St. Paul de Loanda, or its island, you may run with a S. by W. wind; but, if it blows hard, it will be found difficult; therefore you must go into Bengo Bay, which you safely enter as far as 10 fathoms, and ride there till next day; then you are sure of a land wind that will carry you to port.

Loanda Island is so low, that it cannot be seen when you are in 12 fathoms; though beyond it you perceive the main land, which is higher. Being come so near as to see the island, you will, from the maintopmast, descry the whole of it, and the sea on the East side.

To SAIL into the HARBOUR of ST. PAUL DE LOANDA, when advancing from the northward, you may approach Cape Lagostas within half a mile, on a South bearing; then steer toward mid-channel to the W.S.W., and toward Fort San Miguel, which stands on an eminence West of the town. The Fort should be kept a sail's breadth open to the southward of the N.E. end of Loando Island, passing over from 19 to 12 fathoms, until you get abreast of Fort San Francisco, standing on the East of the town, where you may anchor with good holding ground, in 10 or 12 fathoms.* Vessels should not venture to pass beyond this Fort, as the water shoalens very quickly above it.

In coming from the southward, keep well out to the northward of Loando, or until you open, on nearly a S.S.E. bearing, the bluff point in Bengo Bay, within Cape Lagostas, which you may then steer for, rounding the reef, and proceeding as before directed, nearly up to Fort San Francisco.

---

* *Fort San Francisco*, or *Francisco de Penedo*, is built on a rock, and mounts 64 pieces of cannon. There is a bridge from the Fort to the shore. It is half a league eastward of Fort San Miguel. At half a mile westward of it is the public garden.

Curimba.—An inlet of the coast, at the South end of Loando Island, is called Curimba Cove, and is defended by a fort, San Fernaõ; but, according to Captain de Ville-sur-Arce, this passage is only fit for canoes. From this place the coast forms a lagoon, extending 5 leagues to the southward, and which is divided from the sea by a narrow strip of low, sandy land. From the bar of Ourimba Cove the coast trends S.W. by W. [*S.W.* ¾ *S.*] 3¼ leagues; and S.S.W. ¾ W. [*S.* ¾ *W.*] 7 miles, to a sandy point, called *Palmarinha Point*, on account of its palm trees, green and withered; and from which a sandy reef stretches off nearly 2 miles.

The Harbour of Angola (says H. B. R.) is very extensive, with a great depth of water. European vessels are recommended not to anchor within 1½ miles of the town; for as the nights are in general calm and oppressively hot, the sea breeze becomes of the utmost importance, and by lying close under the island it may be enjoyed with some degree of regularity. Numerous fortifications command the bay at every point. The strongest and principal garrison is situated on the brow of a hill on one side of the town, mounting nearly 80 guns. In addition to these are three others, one built on a rock communicating with the main land by a drawbridge, having also a very strong battery of 64 guns, commanding the harbour in every direction.

ST. PAULO DE LOANDA, or, to give it due honour, the *Cidadè de Saõ Paulo da Assumpçaõ de Loanda*, is the capital of the Portuguese possessions of Angola (by which name it is sometimes known) and Benguella. It stands at the head of the bay or port to which it gives its name, deriving it from the Island of Loanda, which shelters it to the West. It is divided into the upper and lower towns, the lower extending East and West along the beach, from the *Ponta da Izabel* westward, or, more properly, from the convent of *Nazareth* to the foot of the Morro of Saõ Miguel, on which stands the fortress of the same name, the citadel of Loanda. Adjoining the Nazareth convent are the country houses of the richer citizens. To the suburb succeeds the *Praia do Bungo*, which forms a point seaward, readily distinguished by the cocoanut trees which shade it. Beyond this is a large collection of small houses, called *Quitanda Pequena*. Passing the Praia do Bungo, we see the handsome customhouse, the quays, and the sheds which protect the boats, &c., of the arsenal. Behind these are the extensive cavalry barracks, fitted for 200 horses. To the left of this is the chapel of *Sta. Iphigenia*, the church of *N. S. de Remedios*, and to the extreme West the church of Corpo Santo. Near this is the *Quitanda Grande*, the chief market. From near to this the *Calçada Nova* leads to the upper city, and is lined with good houses. In the upper city, or cidade alta, are the palace of the governor, the residences of the bishop and the principal functionaries, the churches of S. João (for the military) and of la Misericordia, annexed to the hospital, the cathedral, now partly in ruins. To the North of the governor's palace is the church of do Rosario, and beyond this that of S. Jose, which formed part of a convent coeval with the first conquest. Beyond this are the barriers of the city, outside of which are the *Maiangas*, or public walks, which serve as a place of recreation for the inhabitants, and which also communicate with the *Passeio Publico*, formed on the point at the entrance of the port by the Praia do Bungo.*

According to the estimate given by Captain de Lima of the population, &c., there were, in the city, 1,176 hearths or fire-places; 1,601 whites (1,466 males, 135 females); 491 coloured people (230 males, 261 females); blacks, 3,513 (free males, 335, free females, 445); slaves, males, 1,073; slaves, female, 1,660; or altogether a population of 5,065 souls.

"The town, when approached from the southward, presents rather a grand and pleasing appearance, being situated on an eminence, surmounted by the garrison. The houses are of stone, spacious and substantial, as Portuguese dwellings on this coast generally are, regularly and even tastefully built, with several churches and a cathedral. The market is tolerably supplied during the season, but filthy in the extreme; and every description of provisions was at this time (December) selling at the most exorbitant prices; even water is very scarce, there being no springs nor rivers in the neighbourhood. In order to obviate this inconvenience, a number of large boats are constantly employed in fetching it from Bengo River, which is about 9 miles to the northward, and upon them the town and ships depend entirely for their supply.

---

* Ensaio, &c., por J. Jose de Lima, livro iii., parte ii.

"We were informed that every description of tropical fruit was abundant here during the summer months; and the oranges are said to be finer at this place than at any other along the coast. We had not, unfortunately, an opportunity of judging, in consequence of the rainy season having set in. The only thing we found at all plentiful were herrings, which our people caught so fast that we were compelled to throw them overboard by boatsfull. The zoological productions in the immediate vicinity are lions, tigers, wolves, zebras, and elephants of a prodigious size. The soldiers have some pretty horses of a Spanish breed. A great variety of serpents, scorpions, and numerous venomous insects, bring up the rear.

"Having remained here about a week, and completed a survey of the bay, we worked out, and proceeded to the northward. As we met with many contrary currents outside, and the wind was very light, we made but little progress for some days; this gave us an opportunity of observing the coast, which presented a particularly beautiful appearance, being thickly wooded, and varied with numerous hills, valleys, and rivers. We were led to suppose this line of country was plentifully inhabited, as every night we could perceive fires extending over a great distance."

Captain Owen was received at the port with great civility by the governor and officers, but the inhabitants would render no assistance, and water was not obtained without difficulty.

In the Narrative of the Expedition, this place is described as follows:—

"The city was erected by the Portuguese in 1578; it is large, being a bishop's see, and contains several churches, with many private and public buildings, but many are in ruins or a state of decay. The lower town skirts the shore of the harbour, and consists principally of mean hovels, the residences of the free black portion of the population. The principal commerce consists in slaves, ivory, and bees' wax; the last is procured in great quantities from the interior at a low rate, and sold in Portugal and other Catholic countries at an exorbitant profit.

"The market is tolerably well supplied, especially with fruit and vegetables. Bullocks and goats are plentiful but dear, the former costing about 20 dollars each.

"The climate is considered as very unhealthy; the sickly seasons are September and October, and from January to May, when many of the inhabitants fall victims to dysentery, the most prevalent and fatal disease to which they are subject. The River Bengo supplies the town with excellent water, which is daily conveyed to the city in tank boats, at the rate of 2 dollars per ton."

The whole of the Island of Loanda, and of the bank which stretches off from Point Palmarinhas, is safe, and has a considerable depth of water close-to. To the N.E. of Point Palmarinhas is the Portuguese establishment of *Tanza*.

Coanza, or Sleeper's Bay, is a slight indentation of the coast, the South point of which scarcely projects from it, lying S.E. by S. ¼ S. 6 miles from Point Palmarinhas. At the bottom of the bay is a small sandy beach, and the bay may be known by a high, dark coloured wood in its centre, near the beach. In its northern part are two hills, called the *Paps*. You can anchor in it in 6, 7, 8, and 9 fathoms, oazy bottom. The South point of Coanza Bay is the North limit of another bay called *Nicephas Bay*, which will afford anchorage from 8 to 9 fathoms. Its South point is called *Molli Point*, in lat. 9° 20′ S., lon. 13° 6′ E. It is densely wooded, and owes its name to a small Dutch fort which formerly existed on it.

The **COANZA RIVER** is a very considerable stream, of which we know but very little. Its upper branches have been traversed by Dr. Livingston, in his journey in 1853, 1854; but of its navigable state we have but few remarks. Point Molli is its North point, the entrance being about 2 miles wide, the current issuing from it being exceedingly rapid. At the distance of 3 or 4 leagues off, the sea is discoloured by its muddy waters. The mouth of the river may be known by the Paps (or *Mamas*) above mentioned, and also by an island on the middle of the bar, densely covered with trees. The banks, &c., which form the bar, are shifting, and consequently no permanent directions can be given. To the same cause is owing the existence of several islands in the mouth of the river, which show signs of having been once inhabited, but now only frequented at times by fishermen. The bar of the river frequently breaks throughout its whole extent, and to enter the river it is doubtless necessary to await a favourable time. A boat should not attempt it. Small vessels drawing at most 8¼ feet can enter it, and penetrate a considerable distance up the river. Its direction appears to be about E.S.E., or East, true.

Along the course of the river the Portuguese have several establishments and districts, of which the new district of the Duque de Bragança, in the Ginga country, 360 miles from its mouth, appears to be the most remote. Many of these presidios are very old, dating from periods soon after the first conquest, but of the present nature of which we have not many particulars, those most recent and authentic being given in the work of Captain de Lima, in 1846.[*]

The Coanza is the southern limit of the kingdom of Angola.

THE KINGDOM OF BENGUELA.

Benguela, a province of the Portuguese dominions extending from the Cuanza River to Cape Negro in the deserts of Cimbebasia, has a coast of 440 miles in length. In most European works it has been termed Benguela; by the Portuguese authorities it is spelt Benguella.

The Portuguese obtained their first possession here on the site of the present capital, in 1617, when the governor of Angola, Manoel de Cerveira Pereira, established a fort, and subsequently obtained for himself the title of Conqueror of Benguella.[†] At the present time the country is divided into three presidios and four districts, which contain an estimated population of 140,514, divided as follows:—whites or Europeans, 92; coloured or mulattoes (slaves and free), 3,232; negroes (slaves and free), 137,190.

It must not be supposed that the Portuguese Government have authority over all the people enumerated above; as in other cases the sovereignty is merely nominal. In former times, when the slave trade was actively and profitably pursued, this possession was rich and flourishing. Since the activity employed in its suppression, it has sunk into great wretchedness and depression; the trade in negroes is still pursued in an illicit manner, commerce having no existence, with the exception of a few exports of ivory, wax, gum-copal, and some skins. Cultivation is strictly limited to the necessities of the population.

CAPE LEDO, or MERRY CAPE, in lat. 9° 46′, lon. 13° 12′, is about 10 leagues S. by W. ½ W. [*S. ¼ E.*] from the mouth of the River Coanza. This cape is a high, rugged promontory, with straggling trees, projecting into the sea; to the northward of it, about 4 leagues, and as far as *Black Rocky Point*, the coast is all steep hills and verdant land; there is a sandy cove, called *Massoté*, close to that point, which affords but little shelter, and at the head of which is the mouth of a small river, now called *Suta*. Near this is the best landing place, at a small factory.

---

[*] At about 2 leagues from the entrance is the Island of *Quinzanga*, which has a few houses on it; and abreast of it, on the North bank, is the Portuguese village of *Calumbo*, one of the earliest establishments. At 90 miles above the entrance is the *Presidio of Muxima*, founded in 1599, which rules over a population of 9,168, including 13 Europeans. At 35 miles above this, on the opposite or North bank, is the *Presidio of Massangano*, founded in 1580-3, standing on a tongue of land at the confluence of the Cuanza and *Lucala* Rivers. The fort is regularly constructed. The population of this presidio is 13,114, including 22 Europeans or whites. The *Presidio of Cambambe* is 40 miles above this last, and has a population of 21,546, including 10 white people. It was founded in 1604.* This is the limit of the navigation of the river from its mouth, for 30 miles above Cambambe there are some large cataracts and rapids. Between Cambambe and Massangano, on the North bank of Cuanga, the famous fair of *Dongo* is held. The next presidio is that of *Pedras de Pungo an Dongo*, containing a population of 10,291, with 33 whites or Europeans. It was the ancient capital of the kings of Dongo, and taken by Portugal in 1671. The fort is 5 miles from the North bank of the river, and 20 leagues E.N.E. of Cambambe. It stands in a superb situation, in the midst of a country of wonderful beauty and fertility. It occupies the luxuriant summit of a sandstone rock, inaccessible, except by a cavern through it to the fort. The fantastic forms of this rock remind the traveller of the ruins of an Egyptian temple. The last presidio on the river, 360 miles from its mouth, was founded in 1838, and named *Duque de Braganza*. It is the conquered districts of *Quiloange Quiassama*, taken from the king of Ginga. It is stated to be healthy and fertile. Of its population very little is known, but is supposed to be about 20,000.

We have extracted these particulars from the "Ensaio Statistico" of Captain J. J. de Lima, livro iii., parte i., p. 4; and parte ii., cap. i., pp. 11 et seq.

[†] The relation of this conquest will be found in Captain J. J. de Lima's work, livro iii., *parte ii., p. 27.*

At 5 leagues S. ¼ W. [*S. by E.* ¾ *E.*] from Cape Ledo is *Cape St. Bras* (St. Blaize) which appears like Portland in the English Channel. The shore between forms a slender bay, which is bordered by remarkable white cliffs; the soundings are regular, with 10 fathoms, 2 or 3 miles off-shore. On the North side of Cape St. Bras is a sandy cove, where you may anchor in from 8 to 4 fathoms. To the North of a white cliff is the mouth of the small river Quesimi (qy. Quissama).

"I anchored with Cape San Bras bearing S.E. three-quarters of a mile. I found a very long rolling swell. I took the master sounding with me, and found 6½ and 7 fathoms water within a quarter of a mile of the Cape, and 4½ fathoms within half a cable's length of it, with the same depth all round the bay near the beach. I discovered a spit of sand running out at the head of the bay, about a quarter of a mile in length, with deep water close to it on either side; inside the spit there is a beautiful snug little harbour, about a quarter of a mile long, and 3 cables' length broad, with 2½ and 3 fathoms water nearly the whole way up. The harbour is full of fish; the only afternoon I was there, I hauled the seine, and caught a great quantity of Cape salmon, flat fish, lardines, soles, nine sharks, and ten sword fish. I did not see any Portuguese settlers there, but a few blacks from the country, who seemed inclined to be very friendly and anxious to trade."—Commander *P. H. Dyke*, R.N.

From Cape St. Bras the coast trends 11 leagues S. ¼ E. [*S.S.E.* ¼ *E.*] to a bluff headland, named *Punta da Longa*; at some distance southward of which is the mouth of *Rio Longo*, the entrance of which is in lat. 10° 19′ 30″ S., lon. 13° 31′ E. This has been a general rendezvous for slave vessels from Benguela and St. Paul de Loanda, from which place the slaves are marched overland. There are no inhabitants; but lions, tigers, deer, and other animals, exist in great numbers.

CAPE BENGUELA VELHA (*Old Benguela*), sometimes called the THREE POINTS, is 33 miles S. ½ E. from Ponta Longa. It is a high, steep, perpendicular point, projecting considerably from the coast. On its summit is a large village, and some factories are established in the bay formed to the North of it. Within the cape the coast trends to the East for 6 miles, which on the old charts is called Babia, or Praia Longa, which is limited by *Ponta Morena*, the South point of the mouth of the Rio Longo. The coast is all safe.

RIO CUBO.*—At 9 miles South of Cape Old Benguela is the North point of the entrance of the *Rio Cubo*, with an uninhabited island, nearly 3 miles in length, in the mouth of it. According to M. Kerhallet, this embouchure is common to the Cubo and the *Rio Moroa*; but in the work of Captain de Lima no mention is made of such a river. The Rio Cubo is a very large river, said to be 300 miles long, running first N.W., and for the last 100 miles to W.S.W. At 12½ miles from the Rio Cubo is the village of *Kingo* or *Quingo*, where seven large factories are established. Landing is very difficult here, but this does not prevent vessels from embarking their cargoes.

NOVO REDONDO.—This Fort, which was founded in 1769, and rebuilt of stone in 1785, is in lat. 11° 12′ S., lon. 13° 51′ 30″ E. This place has been erroneously laid down by Captain Owen, who places it to the S.W. of its true position. The town is considered to be the third, in point of size and consequence, in the Portuguese possessions, but the Fort appears to be in a very dilapidated state. Stock of all kinds may be procured here, but no water. You can seldom land, excepting in the surf boats, a number of which are always in readiness on the beach, though not always at the service of the British officers. The best anchorage is with the Fort bearing E.S.E., in from 4 to 7 fathoms. The town may be known by the large white houses on the hill, or at a greater distance by the very high mountains behind it.

The *Rio de Novo Redondo*, called by Captain de Lima the *Rio Gunza* (or *Gunza Cabolo*), rises about 60 miles in the interior. It flows through a rich and thickly populated country. Before the fort is a bank, which is not mentioned either by Captain Watson or Captain Simon. It extends 3 miles to the West, and therefore vessels should keep off beyond that distance. Captain R. de Rosencoat says that a brig struck on it, and was obliged to throw her guns overboard.

From Novo Renondo the coast runs nearly in a straight line to *Quicombo*, or Manikicongo, as it is called in the old charts and directories.

* Called variously *Rio Curo*, *Cuba*, *Coubo*, *Cuevo*. The entrance of the river was formerly called the *Porto de Sumbe Ambela*.

QUICOMBO.—The South point of this Bay is in lat. 11° 20′ S., lon. 13° 48′ E., off which there is a rocky shoal, on which the sea sometimes breaks, and which extends about a mile to seaward, or N.W. There is good anchorage in the Bay, except during the time of the rollers or calêma, and then it is requisite to anchor outside the point. To enter the Bay, you should keep the village bearing South or S. by W., when you may anchor at any convenient distance. The inner anchorage is with the village bearing S. by W.; the South point S.W. by W.; and the North bluff point N.E. by N.; or with the Fort at Novo Redondo just shut in by the latter. On leaving the Bay, you should not come any higher than N.W., until you are well clear of the shoal off the South point. Here are several Portuguese factories for slaves, orchilla, gum, &c. Bullocks are very plentiful and very cheap, and water, though indifferent, is easily obtained. The Bay may be known at a distance by a white road leading from the village over the mountains. It is 8 miles S.W. by S. from Novo Redondo. This Bay is the more important to be known, as it is the only one from hence to Little Fish Bay, where water can be easily procured. It is easily made out in coming from the South by *Red Point*, which is 3 miles South of Quicombo, and by the mark given above.[*]

"Quicombo is a capital place for watering; close over the beach near the village is a large sheet of water with a running stream, which comes from the mountains, where you fill your casks, and parbuckle them into the boat. I have been given to understand that, for about a couple of days after the full and change of the moon, the rollers set in so very heavy that it is impossible to communicate with the shore, much less procure water; therefore, you ought to be careful, and not anchor nearer to the beach than 1½ miles, should you be going to stay over that time. I saw the French brig-of-war *Messager* go into what is called the inner anchorage, but was obliged to shift her berth out again immediately, in consequence of her rolling so heavily. It is about 8 miles to the southward of Novo Redondo; there is a reef that extends about 1 mile (and which constantly breaks), running out from the southern point of the bay, which is very bluff, and quite red, it being the only place near here where the land is red, so it cannot be mistaken. Close at the back of the village there is a large zigzag road, communicating with the interior, which is the most conspicuous mark of all.

"The bearings I took when anchored were:—Road on the back of the town S.S.E. ¼ E.; southern point, S.S.W.; North point, N.E. ¼ E.; in 6¾ fathoms, a good berth, but if anything, rather far out.

"There are a great number of bullocks to be got at fifteen dollars apiece, but as we had no necessary money on board, and the Portuguese not liking to take Government bills, we could not procure any."—Commander *P. H. Dyke.*

Quicinga (or *Quissinga Pequena*), in lat 11° 29′ S., is a cluster of native huts; you can seldom land here except in surf boats or bimbas.

Whales Head, in lat. 11° 35′ S., is a dark coloured point, projecting about a mile into the sea from the land on either side, forming the North side of a small indentation, called Pigeon Cove; about 2 miles to the northward is a remarkable piece of table land near the beach. At 1 mile South of Pigeon Cove is a large barracoon, and several smaller ones mark the site of *Quicinga* or *Quissinga Grande.* At 9½ miles South of this is the entrance of the *Rio Tapado* or *Egito*, rising near a town of the latter name, 60 miles inland. It is sometimes called *Egypto.* It is not easily made out. There are some barracoons or factories.

From Quicombo the coast runs S.S.W. ¼ W., 39 miles, to *Logito.* The shore is very bold, being formed of high, perpendicular, chalky cliffs, which are seen at a great distance when the sun shines to the westward of the meridian. You can run up the coast from Lobito to Quicombo, within a mile of the shore, without having soundings with the hand lead.

Logito River, in lat. 11° 58′ 30″ S., lon. 13° 45′ 15″ E., is 25 miles N.E. by E. from Lobito Point. It is an excellent watering place when the sea is smooth; the water, coming from the mountains, is perfectly wholesome, and better than at any other place on the coast. The most expeditious plan is to haul the casks off to a boat anchored outside the surf, and then raft them off to the ship, which cannot approach nearer than 1½ miles to the shore. Here is a Portuguese factory for slaves and orchilla. Logito may be known by the high bluff point which forms the South point of the Bay.

Anha or **Hoanha**, or *Morombo*, is a small river 9 miles E. by N. ¾ N. from Lobito *Point*; it runs into a small bay, which may be known by trees close to the shore. There are several Portuguese residents trading in slaves and orchilla. You may anchor in 7 fathoms, with the River S.E. by S. 2 miles.

Anha is a large village to the northward of Lobito, and apparently, from what I could see from the ship, far more luxuriantly situated than any other place along the coast. There is a large river running down through the village, which adds much to its appearance, but in consequence of the heavy surf which invariably sets on the beach, it is impossible for man-of-war boats to land and procure water, even under the most favourable circumstances.—Commander *P. H. Dyke.*

LOBITO* is a very excellent and secure harbour, the best on any part of the coast, but it has not hitherto been noticed in any chart or book of directions. It appears to have been unknown, excepting to the slave traders, until it was discovered by Captain H. J. Matson, in H.M.S. *Waterwitch*, in 1840. Even the Portuguese vessels of war, and the military authorities, professed entire ignorance of such a place. An attempt has lately been made to remove the government establishments from Benguela to Lobito, and a fort and a customhouse are already in course of erection. Water can only be procured in the rainy season; at other times it must be brought from Anha or Catumbela. Fish can be taken with a seine in great abundance. The beach on the N.E. side of the harbour is almost perpendicular, there being in most places 10 fathoms within 30 feet of low water mark. This harbour is not easily made out by a stranger, and a vessel might pass within 4 or 5 miles without perceiving the entrance. It may be known at a distance by a row of white marks on the hills to the northward; but the latitude (12° 20′ S.), or its bearing from St. Philip's Bonnet, E.N.E., 23 miles, is the only sure guide. It is high water here at 4^h 15′; rise, 6 feet.

"Lobito is a beautiful harbour, about 3 miles long, and 1 mile broad, with 10 fathoms all the way up, close to the western shore. In rounding Lobito Point, you may go within a few yards of it, as the beach is quite steep, with 10 fathoms water. In working up to the anchorage, you ought not to stand over on the eastern shore into less than 8 fathoms, as it then begins to shoal very suddenly. It is a good place to cut wood, but you must first obtain permission of the governor of Benguela, who is a remarkably civil and obliging person.

"Bullocks and poultry are likewise to be obtained, and very good, the latter five or six for a dollar. Oysters are in great abundance on both sides of the river, at the head of the harbour, from the shells of which an immense quantity of lime is made, and I believe is principally exported to Benguela and St. Paul de Loanda. No water is to be got in the neighbourhood, otherwise it would be a famous place to heave a vessel down, or clear her out. In coming from the southward, you will see a rather large white building on the hill, which is the fort at Catumbela, and close to the northward of it there is a large niche in the land, which is very conspicuous, and is about 7 miles to the southward of Lobito Point. In coming from the northward or westward, you will see three white marks in the land joined together, which appear precisely like the arches of a bridge; they are close to the North side of the entrance of the harbour.

"The Portuguese Government were anxious a few years since to form a settlement there instead of Benguela, in consequence of its being so unhealthy, but were obliged to abandon the idea, after building some few houses, owing to not being able to find any water, and in addition to which it is also very unhealthy.

"There is about 6 feet rise and fall of tide; the head of the harbour at low water is perfectly dry, and the smell is by no means agreeable, particularly of an evening, when the tide is out. There are an immense number of fish in the harbour, sharks amongst the rest, so one ought to be careful allowing any person to bathe. I have seen five or six at once near the ship, and have had several in the seine, which have always broken through." Commander *P. H: Dyke, R.N.*

The RIO CATUMBELLA (or Cata-Bella), enters the sea at 9 miles S. by W. ½ W. of Lobito Point, and 10½ miles N.N.E. of St. Philip de Benguela. The entrance is barred, and is conspicuous from a remarkable opening in the hills, 4 miles inland, through which the river passes. It is most clearly seen when bearing East. A white fort at the entrance of this gorge also points out the river. Inland, the river has considerable dimensions, and is said to have a course of 60 leagues, rising in the South in the mountains of Caconda. It is subject to great inundations in the rainy season, and is very unhealthy.

---

* *Catumbella das Ostras*, or Cotovelo das Ostras, is said by M. de Kerhallet to be a cove or village, 4 miles South of Logito; Captain de Lima says it is the same as Lobito.

ST. PHILIP DE BENGUELA (or the Cidade de S. Felippe de Benguela), capital of the province or kingdom, was a place of considerable trade, and next in consequence to St. Paul de Loando. It was the last of the Portuguese settlements on this coast; is frequented chiefly by the Brasilians, and is situate on a plain fronting the sea, containing about fifty houses, neatly built in the old Portuguese style, tiled and white-washed, but composed chiefly of mud. A fort is situate to the left of the town, mounting twenty-eight pieces of small calibre, but in a most dilapidated state. There are two churches, but one is in ruins. The dress worn by the natives is a scanty piece of blue cloth thrown loosely round them, adorned with beads and various trinkets of European manufacture. Others are entirely folded in lion and leopard skins. The slave trade has been here carried on to a great extent, and the profit arising from this inhuman traffic is a strong inducement for its continuance. The governor encourages the trade by every possible means, but a night guard boat is constantly on the look out, in order to prevent illicit communication.

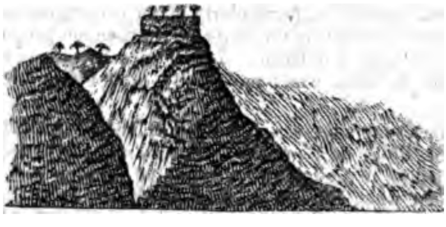
The population amounts to 2,438, arranged as follows: whites, 38 men, 1 woman; 85 males, 94 females, free coloured—179 in all; free blacks, males, 560, females, 510; slaves, males, 520, females, 630.

Captain Matson (1843) says of this place, that it is in a wretched state of dilapidation and decay; the houses, originally only of mud, are now falling to pieces. There is scarcely any trade but that in slaves, and even that has been almost entirely suppressed by the British cruisers. The soil is perfectly barren, not the slightest appearance of vegetation, excepting near the River Catumbela. On leaving this anchorage, a vessel should not bring the town to bear to the westward of South, until she is 4 or 5 miles distant; she will then be clear of the shoal to the northward.

Elephants, lions, tigers, and various other wild beasts, are abundant in the vicinity, together with crocodiles, alligators, and numerous serpents, with other reptiles. In December, 1825, no rains had occurred at the usual season for two years, and the inhabitants were entirely dependent upon St. Paul or Angola for the necessary supplies, instead of, as heretofore, furnishing that place with all kinds of provision. The anchorage is abreast of the Fort, in 4½ fathoms, and three-quarters of a mile from the shore.

Of Benguela Bay, which was formerly called *Bahia das Vaccas*, or *de Sant Antonio*, the West point is a most remarkable headland, called by the Portuguese *Ponta do Chapeo*; and by our seamen, the *Bonnet of St. Philip*. It appears to be a clump of trees, which are so close and thick that they seem to have been cut with a pruning knife into the shape of a beefeater's (bœuffetier's) bonnet; and, though they are luxuriant, all the neighbourhood is quite barren. The point on which they grow is considerably elevated, and can be seen at a great distance. It is composed of materials like those of the cliff below, and covered with shrubs and verdure. The land in the bottom of the Bay is double, high, rugged, and barren, except the valley close behind the town, which is covered with verdure.

The annexed view of St. Philip's Bonnet, at 2 miles' distance, when it bore W. by S., was drawn by Captain Dalzel in 1790. The trees at the top have since grown thicker, and now appear as one close mass.



St. Philip's Bonnet and the town of Benguela are nearly on the same parallel, at the distance of 6 miles from each other; but the Bay, from its extreme eastern and western points, is 7 or 8 miles broad, and about 3 deep to the beach. Within the transit line of the two points, and more than halfway over to the East, the depth of water is 17 fathoms, and the depth gradually decreases to 6 fathoms within a mile of the shore. The best anchorage is with the flagstaff and western church in a line.

The country around abounds with excellent fruit and vegetables; but the water is not of the best quality, nor to be procured without some difficulty, by baling it from wells of considerable depth, at about 300 yards from the beach. In 1811, H.M. ship *Nereus*, Captain Heywood, was well supplied by the governor with bullocks, sheep, goats, hogs, fruit, and vegetables. A great quantity of fine fish were caught by the seine in the Bay.

On nearing Benguela from the southward in November, 1825, the water, every evening, appeared to be nearly white; and, when agitated, emitted the most brilliant phosphoric coruscations. Here was picked up a number of molluscæ, possessing a perfectly new character, being shaped like the *biche do mar*, cylindrical, and terminating in a blunt cone, open at one end, and hollow as far as the conical projection. Some were a foot long by about 2 inches in diameter, perfectly flexible, and upon being placed in the hand gradually dissolved like ice; but, when set in motion, either in or out of the water, became vividly luminous.—(See pages 39—41.)

On the 30th of November the *Leven* arrived at Benguela, and the following is Captain Owen's description:—The town is situated on an open bay, formed to the S.W. by a projecting point of cliffs, above which is *Monte Sombreiro*, known more generally by the name of St. Philip's Bonnet. The town, which is poor and contemptible, is situate in a marsh of stagnant pools, which in the wet season is almost inundated, and, of course, very unhealthy. The natives in the interior will not allow the Portuguese, or *any other people with straight hair*, to enter their territory.

No sheep were seen, but goats and bullocks were in great abundance; the latter of a small species. Lions and tigers are very numerous in the surrounding country, and hippopotami and alligators in a small river near the town: elephants common, but sometimes scarce.

The immense and desert coast between Benguela and the Cape of Good Hope is yet imperfectly known, and has not been perfectly surveyed.

To the West of St. Philip's Bonnet is a bay limited to the West by Point St. José, which is low and sandy. A palm tree stands about three-quarters of a mile within it, and is the only mark to distinguish it in coming from the West. The bay is 4 miles wide, and separated into two by a rocky point. To this bay the name of *Bahia Farta*, or *Torta*, is given, but Captain Kerhallet limits this title to the West half, calling the East portion Bahia das Vaccas, which, as before stated, is the original name of Benguella Bay. The *Rio Marimbemdo* (or the Vittoria River) falls into it. There is excellent anchorage in these two bays. In one of these a boat belonging to the *Waterwitch* remained concealed for nine days, watching a slaver in Benguela Roads, which she captured, on her leaving the anchorage, with 390 slaves on board.

"Between Benguela and Point Salinas is the *Rio Vittoria*, or *River Victoria*, which is nothing more than a small creek extending considerably into the interior; the banks extremely beautiful, and covered richly with verdure. Near this place, in 1825, was seen a large herd of cattle, and shortly afterward, to the northward, a village, containing about thirty huts of the rudest construction, built of mud, the largest not more than 8 feet high, with a little oval-shaped entrance about 3. On the beach were several boats of a rectangular form, and several natives, quite naked. Continuing along shore northward, many fishing canoes appeared, and another village of much greater extent and neater construction than the last. One house in particular was large, well built, and whitewashed; from which, and elephants being very numerous hereabout, it may be supposed that they have some communication with the Portuguese of St. Philip or Benguela."

Salinas Point is a piece of low, flat, sandy land, extending 5 or 6 miles beyond the high land, and has a remarkable tree at its extreme point, which much resembles a sail, and is frequently reported as such. There is a reef to the southward of it, and the water between it and Luash is shoal; but to the northward of the point the shore is very bold, there being 10 fathoms within a cable's length of the beach. It is, however, dangerous to approach it during the night; for the beach being of white sand, and projecting so far from the high land behind it, renders it difficult to be seen until very close. Many vessels have run on this beach on a fine, clear night.

To the northward of the point, at 5 or 6 miles distance, a settlement has been formed, where a large quantity of salt is made and exported, chiefly to St. Paul de Loanda and Benguela.

The coast between Salinas and St. Philip's Bonnet was not minutely surveyed by Captain Owen, or so imperfectly as to mislead strangers. This defect is now obviated in some measure by the sketch made by Commander Alan Gardner, in 1853. The course from Salinas to St. Philip's Bonnet was given as E.N.E. ¼ E., but it is not possible to make a direct course between these two points; the land between them forming the segment of a circle. The English schooner *Harrington* was totally lost on this beach in March, 1843: she had taken the bearings of St. Philip's Bonnet at 6ʰ 30′ p.m., and at 7ʰ 30′ she was aground.

A stranger having made the high land of St. Philip's Bonnet before dark, bearing E. ½ S. or E. ¾ S. 5 or 6 leagues, would not see the intervening low land, and would perhaps steer directly for the Bonnet; or he would consider East to be a very safe course; but even this would take his vessel on the beach, off which there is no anchorage. One remark may be made, that the current will drift a vessel rather off the coast.

When St. Philip's Bonnet bears E.S.E. you may steer directly for it, and, having passed it at any convenient distance, proceed into Benguela Roads.

Loacho, or *Luash*, in lat. 13° 0′ S., lon. 12° 59′ E., is a very snug harbour for small vessels, completely sheltered from all winds. It is here that the slave vessels belonging to Benguela generally embark their slaves.

"*Luash Bay* is a good anchorage, but in general there is a deal of surf on the beach. What I consider the best anchorage is in 7 fathoms, with the bridge bearing S. by W. ½ W. half a mile. The anchorage further in, under the lee of the bridge, appears occasionally to be good, with beautiful smooth water; but when the rollers set in (which is, I am given to understand, at the full and change of the moon), I think, from what I have seen, that even this vessel would almost touch the bottom, therefore do not consider it a safe anchorage for men-of-war. There are plenty of good bullocks to be got, but no water; and slaving is carried on to a great extent."—Commander *P. H. Dyke, R.N.*

"*Camena*, or *Equimena*, *Bay*.—In lat. 13° 12′ S., lon. 12° 53′ E., is a large bay, about 6 miles to the North of Elephant Bay; but ships going to anchor there should be extremely cautious in not having too much way on the vessel, as you do not get soundings until close in, and then from 15 fathoms rapidly to 3 fathoms, at about half a mile distant from the beach.

"The first time I went there I got far too close in, and was obliged to warp further out, so ever since then I have invariably sent a boat in and anchored her in 8 fathoms, so brought the vessel to anchor close to the boat; but on one occasion, even then, although I dropped my anchor close to the boat, and only veered to 20 fathoms, I had only 4 fathoms under the stern.

"I found nearly in the centre of the bay, close down to the beach, merely the bed of a large river, but by digging holes in the gravel the water flowed in rapidly; I dug three each time, about 6 or 7 feet long and 3 deep, and, although I kept filling casks and breakers during the whole day, the water did not appear to diminish in the least, and I must say, I think the water was as good as any I ever tasted. The best time for watering is the morning, before the sea breeze sets in, which is very irregular as to time; but after that there is often a nasty surf on the beach, which hinders the watering.

"In a couple of days I got on board this vessel 32 tuns. The country all around abounds with lions, zebras, and deer, which came down and drank at the places we dug, after our departure in the evening.

"The Rocella (scarlet dye) trade appears to be the only one, with the exception of that of slaves; and from what I could see, I strongly suspect there is a good deal of the latter carried on. I frequently saw small parties of ten or twelve brought into the place, guided by a few men armed with muskets. The land to the northward is steep, and quite white, apparently chalky soil, and terminates in a high bluff, which forms the northern entrance of the bay. The white cliff may be seen at a great distance, and after having once been seen, can never be mistaken."—Commander *P. H. Dyke, R.N.*

ELEPHANT BAY (*Bahia da Torre*) is one of the best anchorages on this part of the coast; it is perfectly secure, and sheltered from the only winds that blow, the South and S.W. It may be known at a great distance by a very high piece of table land near the bottom of the bay, and under which is the best anchoring ground; that nearest the eastern shore is rocky in some places. The rollers, or caléma, which occasionally set in along the whole coast, are not felt in this bay. Fish can here be procured by the seine in great abundance, and the hills abound in game and wild animals of all kinds, which, owing to there not being any inhabitants, are remarkably tame. This is by far the best place on the coast for refitting and refreshing the ship's company after a cruise. I have repeatedly anchored here for a few hours, merely for the sake of giving the men a run on shore, to wash their clothes, to bathe, and haul the seine. It is the only place where this can be done with impunity: the climate is very salubrious, as is the whole coast to the southward of Salinas. Before anchoring in this bay to refit, it would be as well to procure a bullock or two and some vegetables at Little Fish Bay (lat. 15° 13′ S.), which can be purchased there on very reasonable terms.

Water cannot be procured in Elephant Bay, excepting during a rainy season, which sometimes does not occur once in 5 years; there was not any rain whatever during the years 1840-41-42; but I have been informed that, when the rains do set in, they continue incessantly for weeks together, and the country then becomes almost inundated. The appearance of a large number of watercourses seems to corroborate this statement. The *Rio Coporoco* is marked as falling into it, and a Portuguese factory is established in the bay. Excellent oysters can be gathered from the rocks on either side of the bay. —*Captain Matson.*

The *Friar's Rocks* (*Os Frades*) are in lat. 13° 14′ S., lon. 12° 49′ E., and are about 12 or 14 feet high.* Between them and Cape St. Mary is the village of Calunga.

"*Elephant Bay* is by far the best and finest bay all along the coast, with capital anchorage. I always anchored in 7 fathoms, about 3 cables' lengths from the high land, close up in the corner. The water is perfectly smooth, and the wind always blows off the high land; I took the opportunity of careening the vessel, and putting some sheets of copper on the bottom well under water. The only drawback to the place is the want of water, not a drop of which can be got even by the settlers for their own consumption, they are obliged to send to Cama Bay for it, a distance of 6 miles.

"Fish of all sorts are in great abundance. I frequently caught with one haul of the seine more than sufficient for the whole of the crew. During the time I was there I established a regular signal post on the hill, from which I could see at least 45 miles on a clear day; and should recommend others to adopt a similar plan, should they be going to remain any time there. In the neighbourhood of Elephant Bay the land is very mountainous, with flat table land, at the southern entrance of the rocks, called the 'Friars' Rocks,' with deep water close to them. In coming from the northward, the land, about 6 or 7 miles from the bay, appears quite white, like chalk, and may be seen for a considerable distance. There is not the slightest danger in approaching the land anywhere along the coast in that neighbourhood, as there is deep water close to the land all along.

"There is a rise and fall all along the South coast, of about 5 feet. The westerly winds generally prevail. The current, from what I have observed, *never* sets to the southward, occasionally to the eastward, but principally to the N.N.W. I was set one evening, when between Capes St. Mary and Martha, at the rate of 1¼ miles an hour to the eastward."—Commander *P. H. Dyke, R.N.*†

The coast northward of Cape St. Mary (on which is a pillar) forms another bay, the shore of which is steep, with a sandy strand; and here, at a short distance off, no bottom is to be found with a line of 50 fathoms. This is called *St. Mary's Bay*, and is destitute of fresh water. The *River Gubero* appears to be about 5 leagues to the southward of Cape St. Mary. The coast between is high and precipitous, intersected at intervals with deep ravines, apparently the channels of torrents during the rainy season; and there is a depth of 60 and 70 fathoms near the shore.

This part of the coast was visited by Captain Chapman, in H.M. sloop *L'Espiègle*, March, 1824, and communication had with the natives, who proved deceitful, and who seemed to have not the least idea of any language but their own, although so near to the Portuguese. Little cultivation of the interior could be seen.

CAPE STA. MARIA, the Cape San Roque of the old charts, is in lat. 13° 26′ S., lon. 12° 35′ E. It is of moderate height, and surmounted by higher land. Some white patches, in the small bay of Sta. Maria, point it out from a distance. *Sta. Maria Bay* lies to the East of the cape; in it is a large white coloured islet. A black rock, rising 50 feet above the water, called *Ilheo de Pina*, lies at 3 miles South of the cape. It lies off the mouth of the *Rio Padram*, or *S. Joaõ.*

---

* The description of the coast between this and the Congo has been corrected from the observations of Commander *H. J. Matson*, H.M.S. *Waterwitch*, 1839—1843.

† Nautical Magazine, April, 1848, pp. 170, et seq.

CAPE STA. MARTHA is 26 miles S.W. by S. from Cape St. Mary, and is of moderate height. Between these capes the old charts mark a river, the *Rio Gulen*, which was considered as the southern boundary of Benguela, but this is now placed at Cape Negro. At 6 miles South of Cape Sta. Martha is a small unexplored bay, called *Bahia das Matillas*. On the chart of Captain de Lima this is called *Enseada da Lapa*. The bay to the N.E. of the cape is called Bahia Vermelha.

From Captain Owen's Voyage we learn that the *Barracouta* sailed round Cape St. Mary within about 50 fathoms of the rocks. On the western side of the cape were seen three beautiful coves or bays, capable of affording excellent anchorage. The mountains from this Cape northward to Elephant Bay are of granite, interspersed with a great quantity of mica and quartz; one of the cliffs, abounding in the former, reflected the sun's rays to a considerable distance, like a vast mirror.

"Continuing her course toward Benguela, the *Barracouta* passed the low sandy point of Victoria, or St. Francis; after which several villages of straw huts were seen. Off one of these the sloop hoisted her colours, which the inhabitants acknowledged by holding up a small red flag, with a black or blue cross upon it. Here the country was generally much more diversified; the valleys fertile and beautiful, studded with huts, but which, from their rude construction, indicated no advance in civilization."

At 5 miles southward of Cape Santa Martha is a little bay, called *Tiger*, or *Village Bay*, and having good ground. To the southward of it, at the entrance of a river (*Rio dos Ramos*), stands a high mountain, called *the Old Man* (*O Velho*). From the Old Man to *Cape-Euspa*, the North point of Little Fish Bay, the bearing and distance are S.W. ¼ S. [*S. by W. ¼ W.*] 12 leagues. Between the Old Man and Cape Euspa are two sandy coves, named *Moscas*, or *Flies Bay*, and *Tartaruga*, or *Turtle Bay*, divided by *Cape Gertruda*, and in either of which anchorage may be found. Of Turtle Bay, in about 14° 54′ S., the shores are fertile, with every appearance of being inhabited. Between this and Cape Euspa is a small bay of similar description, having good anchorage, called *Bahia das Pipas*, because, in 1842, the Portuguese commandant here burnt a large number of casks, intended for slave ships.

BAHIA DE MOSSAMEDES, LITTLE FISH BAY, or ANGRA DO NEGRO, is the most southern station of the Portuguese dominions in Western Africa. The original name was Angra do Negro, afterward called by the English Little Fish Bay. In August, 1715, the Captain General Barão de Mossamedes despatched Colonel Luiz C. C. P. Furtado to explore the coast South of Benguella with an expedition, and this bay was one of his discoveries, which, it is stated, were excellently recorded, and exactly observed. The name of the Portuguese governor was intended to be imposed on it, and an establishment founded, but this did not take place till January 20, 1840, when a presidio was formed on its South side.

The Bay of Mossamedes is bounded on the North by *Cape Euspa* or *Girando*, and to the South by Point Annunciação, 6 miles asunder, N.N.E. and S.S.W. The bay penetrates about 6 miles within this line.

CAPE EUSPA, in lat. 15° 7′ 30″ S., lon. 12° 9′ 20″ E., has nothing remarkable; it is low and dark coloured. From this the rocky shore runs 3 miles S.E. by S. to *Pta. Redonda*, of moderate height, and very steep-to. At 1 mile North of it is the mouth of the *Rio Quenina*. At 1 mile from Pta. Redonda the depth is 140 fathoms, and close to it 20 fathoms, this depth diminishing suddenly towards the South side of the bay, and, therefore, there is no anchorage on its North side. From Pta. Redonda the coast is a sandy beach, forming the arc of a circle facing the West, and terminating at *Ponta Negra* at the South. At 3 miles from the Pta. Redonda is the mouth of the *Rio Béro*, or *Bela*, just to the South of which are the gardens and a chalybeate spring. At a mile from it, on the sandy beach, stand the houses of the factory.

On the summit of Ponta Negra stands the fort of San Fernando, and near it the quarters of the presidio. To the westward of the point the coast forms a small bay, bounded on the West by a high, rocky cape, called *Pta. Grossa*. It is perpendicular, and indeed overhangs its base: on its summit is a look-out house, painted white. It is in the small bay between Pta. Grossa and Pta. Negra that there is good anchorage.

From Pta. Grossa the rocky shore ceases to the West, and forms another bay, bounded by Pta. de la Annunciação, which is low, sandy, and difficult to make out. In this bay is a very dangerous, rocky, and sandy bank, on which is not more than 10 feet water, and in some places not more than 2 feet. It is called the *Amelia Bank*, from a Portuguese war schooner which was lost on it in 1846. Its North end lies with Pta. Grossa bearing E. by S. It may be avoided by keeping Pta. Negra a little open East, or to port of Pta. Grossa, which will lead three-quarters of a mile outside it.

The only vegetation to be seen is that at the government garden, where some cultivation has been attempted. The watering place is at the river, when the boats can lie alongside the bank, and the casks may be filled with a pump and hose. The best time for this is in the morning, before the sea breeze sets in. During the caléma or rollers the water becomes brackish. The climate of the bay is healthy, except near the watering place, where there is some stagnant water. The village is in the bay near the anchorage. There are a large number of natives established in and around the bay. They appear a fine and intelligent race of blacks, called Mocoroca, of the Mucubal nation. They cultivate maize, and have large herds of bullocks, which, with sheep, may be procured. The trade is in ivory, wax, gum-copal, and orcilla, but chiefly in slaves.

Near Point Annunciaçao hills and high cliffs begin along the coast, that extend 6 or 7 leagues S.S.W. as far as the entrance of *Rio dos Flamengos;* and about midway stands *Monte Negro*, which is conspicuous at a considerable distance.* The *Rio dos Flamengos*, the bed of a torrent, issues from a gorge into an exposed bay, called the *Bay of Cape Negro.* On the North bank of the river, a few miles inland, is the village of Lonchaut. At 6 miles S.W. of Cape Negro is a bold cliff projecting from the interior like an immense wall. It is 134 feet high, and being visible for 20 to 25 miles off, is a good mark for Port Alexander. It is called *Sand Cliff.*

CAPE NEGRO.—The coast now trends more to the S.S.W. or *S.W.* to CAPE NEGRO, a headland distinguished by a pillar of alabaster, with the arms of Portugal, erected by Bartholomew Diaz, in 1486, and which stands in lat. 15° 40′ 42″, lon. 11° 58′ 18″, according to the survey of Captain Owen, 1825. It is the southern limits of the Portuguese domination. Near this spot the first trees were seen after leaving the *Cape of Good Hope.* Some bullocks were seen, but no huts or natives.

At Cape Negro, in November, 1825, on approaching from the *southward*, the climate seemed to have changed, and the desert partially ended: the first tree (a palm) for many hundred miles was seen, as also a hut and a native: the heavy sea, and the boisterous and cold weather that had before prevailed, changed into smooth water, and a mild, pleasant temperature. The Cape is formed by a precipitous mass rising at the extremity of a low projecting point, and resembling an island. It is incrusted by horizontal strata of different coloured earths and sand. On its summit was seen the pillar, or remains of the small marble cross, erected by Diaz. The precipice abounds in fossil shells of various species, the most remarkable being of a spiral form. To the southward of Cape Negro is *Cape Albina*, before mentioned, formed by some remarkable steep white cliffs, which, with the rays of the setting sun upon them, resembled a group of Grecian columns in ruins.

PORT ALEXANDER, at 2½ leagues S.W. ½ S. from Cape Negro, is a snug harbour, with excellent anchorage, in which ships may ride safely. The few natives who have been seen here appeared like miserable outcasts. The peninsula, forming the harbour on the North, is a low sandy tongue of land. The outer limit on the East is the high sand cliff, and the coast thence northward to Cape Negro is of a similar description. The N.W. part of the harbour is shallow; but in other parts the depths are 18, 17, 16, and 15 fathoms. *Variation*, in 1825, 23° W.; in 1846, 24° 44′ W.

Sandy Point, the extremity of the peninsula, may be passed close to on the East side, as well as the whole of the continental shore of the port; but the southern shore of the peninsula is guarded by a bank which extends to the West of the port, and shows, from the different colour of the water. Point Alexander is easily made out in coming from the North, from the cliffs, &c., before mentioned; but the approach from seaward to the South will be with some uncertainty, as the Sandy peninsula will be confounded with the main land. The masthead look out, however, will be able to see the port over the sandy neck. Allowance must be made for a slight northerly current. In coming either from

---

* Proceeding southward, from Mossamedes Bay, the rocks upon the coast appear of two or three different kinds, but principally sandstone, in horizontal strata, in which petrefactions are imbedded; others are of primitive or volcanic substance, of harder and more irregular structure. In the dry season many rivers appear to be completely locked up by sandy beaches, but which may, in the rainy season, be broad and rapid streams. Farther northward the land is composed of red intermixed with tinges of blue clay and yellow sand.

North or South, an outer bank, called the *Ringdove* or *Dormer Bank*, must be avoided,* which lies on the meridian of Sandy Point, and 1⅓ miles off from it, on which is only 3 fathoms. To clear it, keep half a mile from the shore of the peninsula, or still better, coming from the North, within that distance of the shore of the main land. It is high water, full and change, in Port Alexander, at 3h; tides rise 4¾ feet. The only resource to be had in the bay is an abundance of fish. The nearest inhabitants are at a village called *Coou*, 9 miles E.N.E. of the anchorage.

From the entrance of Port Alexander the coast runs to the West and S.W., and thence southerly, as already shown, to the entrance of Great Fish Bay.

CIMBEBASIA AND HOTTENTOTIA.

The countries between that last described and the Cape Colony are inhabited by different tribes, which it would be beyond our limits to describe. The coasts have been named according to the people who live on it thus:—

CIMBEBASIA, the country of the Cimbebas, extends from Cape Negro, or Great Fish Bay to Cape Cross: and

HOTTENTOTIA, that of the Hottentots, thence southward to the Orange River.

A portion of this coast having suddenly sprung into great notoriety in the course of the year 1843, from its being the depository of the manure called *guano*,† we subjoin a few general notices of the coast previous to giving the particular descriptions of it.

At about Cape Negro commences that region of desert and arid sands which extends to beyond Ichaboe, resembling in their aspect from the sea, the Great Sahara of Africa in the northern latitudes. The whole of this coast and country is nearly rainless, but at times heavy dews prevail. The origin of this intense aridity is the long continued action of the vertical sun, which is near the tropics for so long a period of the year, that between the latitude of 20° and the tropic he is vertical 62 days, being less than one-sixth of that time over any similar extent of latitude. Besides the dryness arising from this long continued powerful solar action, the West coast of the continent is far removed from the origin of the rain clouds borne by the trade winds, which being deposited during their transit over the continent to the eastward, before reaching the West coast they have parted with all, or nearly all, their moisture. It is to this fact of the solar intensity and the previous deposition of rain, that the guano deposits are owing; the qualities of which accumulations would be entirely destroyed by the influence of rain. Good guano has only been found in three similarly situated localities, that on the *West* coast of Africa; on the coast of Peru, the *West* coast of South America; and on the *West* coast of Australia, all within the same latitudes, and consequently under the same climatological influences.

---

* Seen by Mr. Dormer, of the *Ringdove*.

† The places on the West coast of Africa, on which guano has been found, are as follows:—From a small rock in Sandwich harbour, a few tons, of bad quality, were removed. From Hollam's Bird Island, a few hundred tons were procured with difficulty. From Mercury Island, about 1,500 tons. Ichaboe is the next in succession. In Angra Pequeña, Penguin and Seal Islands afforded about 3,000 tons of indifferent quality. From a small island southward of Pedestal Point, about 8,000 tons were removed between July and October, 1844. From some small rocks between Possession Island and Pedestal Point a small cargo was taken. Possession Island afforded 4,000 or 5,000 tons of very inferior quality. From the Albatross Rocks, South of Possession Island, a small quantity was removed in 1845. Between Cape Voltas and Possession Island, from a small island, called Plum Pudding Island, about 2,500 tons were taken. From Olifant Rock, at the mouth of the river of that name, 1,500 tons of excellent guano have been removed by Government license. In Donkin's Bay there are some detached portions scarcely worth removing. On some detached rocks, in St. Helena Bay, called the Paternosters, about 3,000 tons were removed. In Saldanha Bay, a deposit of good guano has been removed, under Government superintendence, from Mallagassen Island. About 3,000 tons have been taken from Seal Island, in False Bay; and about the same quantity exists on Dyer Islands, near Cape Agulhas; and on the Bird Islands, in Algoa Bay, about 60,000 tons, very wet, and of indifferent quality, will soon be entirely removed. It is believed, after a minute search, that guano does not exist in any quantity on any other part of the African Coast.—*Naut. Mag.*, Nov., 1845.

On page 23 the *South African current* is described in general terms; and on page 27 is a further notice of the same. On pages 13—19 the winds of this part are noticed.

This current always running to the *North*, and the general direction of the wind being the same, render it necessary for vessels proceeding to any part of this coast to make the land to the *southward* of their port, as it is very difficult to work to windward against the current.

Ships running along the coast will often judge themselves farther off-shore than they really are, on account of the light sandy colour of the coast, and the extreme haziness of the atmosphere that generally prevails.

As the rollers (see pp. 33, 36) frequently set upon the coast from the westward with great fury, and there is almost always a tremendous heavy swell thundering upon the shores, it is advisable to give the shore a good berth, except in making the harbours. This remarkable swell, which incessantly sets in from the W.S.W., renders it very unpleasant for ships in calms, which often prevail in the night.

Heavy squalls and gales of wind are frequent on this coast, and often come on without warning, and with a cloudless sky. Sometimes the sand is blown from the desert in large quantities, filling the air with minute particles, which are a long time subsiding, and accompanied by intense heat. These are sometimes disastrous and fatally destructive.

It has been reported that this Western coast of Africa is entirely destitute of fresh water, and that none is to be found between the 16th and 31st degrees of South latitude. This is not the case, as fresh water is to be found on many parts of the coast, as indicated in the ensuing description.

The inhabitants of this coast have also been much misrepresented: Captain Morrell found them generally to be friendly and inoffensive;—they have large herds of cattle and sheep, which that navigator proposed to his countrymen to enter into trade with, as the purity and dryness of the atmosphere are such, that he had a quarter of beef, weighing 200 pounds, suspended at the mainstay, where it became thoroughly dry and sweet, even to the bone, without salt. A bullock may be purchased in many part for 25 cents, and a sheep for 5 cents. His proposition for *jerking* and exporting this article met with no encouragement; and perhaps because his work militates against some of the prejudices of his countrymen, it did not meet the countenance it deserves. From it we have obtained many of the particulars of the coast and harbours.

At 10½ miles southward from Albina Point, the old charts place the *Rio Bambaruga*. It is barred by sand banks, and is inhabited. The South point of the river, called by the Dutch *Point Cunegonde*, is uneven and of a black colour.

FISH BAY, or GREAT FISH BAY, is formed on the West by a peninsula of sand, 7 leagues in length, and trending S. by W. [*S. by E.*] This is called *Tiger's Peninsula*, and its North point is in 16° 30′ 12″ S., and 11° 46′ E. The greatest breadth of the Bay is at its entrance, and is about 2 leagues. The eastern shore of the Bay is formed of high, barren hills, of a brown sandy appearance. The depth, at the entrance, is 20 fathoms, near the middle 12 and 10 fathoms, decreasing thence gradually to 7, 6, 5, and 3 near the shore. Plenty of fish may be gotten there. The peninsula is all sandy, and the isthmus, by which it is connected to the main land, is not above one-third of a mile broad. There are no dangers in turning up this Bay, if you give either shore a distance of 2 cables' length; and when once at the head of this spacious harbour, and at anchor in 5 or 4 fathoms water, you may lie in perfect safety, with one anchor ahead, all the year round.

At some distance from the isthmus, or the South point of the peninsula, the land is bordered with downs, to the distance of 18½ leagues, *S. by E.*, *true*, and forms several slender bays. Here, in lat. 17° 15′, is a river called Nourse River, which was discovered by *L'Espiegle* in 1824.*

The NOURSE RIVER does not reach the sea except during the rainy season. Its mouth during the dry season is barred by a sand bank, on which the sea breaks furiously, particularly on its South point, called in the old charts *C. Ruy Perez*. The current out of it is very violent, and the tides may be felt 10 miles off during the rainy season; the flood setting E.N.E.; the ebb, W.S.W.

---

* 28th Nov. 1825. In Great Fish Bay. Nourse River was not to be found: not a trace of it was visible; neither was there any opening to the land for 30 miles on either side. From this it was inferred that the rainy season commences with the new year, when the waters force this passage, or river, in their course from the interior; and consequently Nourse River may be open at that season; but with the strong perennial winds it is again closed by the sand.—*Captain Owen's Voyage.*

All the coast from Benguela to Cape Negro is occupied by negroes, whose villages are very few. In all this course you find generally from 50 to 60 and 70 fathoms of water, 2 or 3 leagues off-shore.

Captain P. Heywood, in H.M.S. *Nereus*, 27th January, 1811, made the coast northward of Fish Bay, in lat. 16° 18′, which part appeared to be flat, sandy, and streaked perpendicularly with black and brown streaks. The ship was 8 or 9 miles off-shore, in 12 fathoms, muddy bottom. From this spot, the whole of the coast in sight to the northward had the same brown sandy appearance; and it might be seen at the distance of 7 or 8 leagues, were it not for its light sandy colour, and the hazy atmosphere that generally prevails. S.W. winds and a heavy swell rolling in from that quarter upon the shore render a near approach unsafe.

At 30 miles along the coast, from Cape Cross, is a rocky blackish point of moderate height, surmounted by a sandy down, called *Point Farilhao*. Off it are two volcanic rocks, the *Farilhaos*, which clearly distinguish it. Point Farilhão is in lat. 22° 9′ N., lon. 13° 11′ 50″. *Rock Bay*, of which Point Farilhão is the North point, is used by whalers, but we have no particulars of it.

The *shoal of Antonio Casado de Viana*, said to lie at 70 or 80 leagues from this coast, has already been described in page 115.

CAPE FRIO (*Cold Cape*) is in lat. 18° 23′, lon. 12° 2′ 20″. The land is high from this Cape 5 or 6 leagues to the northward, but the shore is sandy and low, and thus likewise it continues for 15 leagues to the southward from the Cape, with a shore generally clean, and a depth of 13 and 14, 17 and 18 fathoms, at a short distance. From Nourse River to Cape Frio the coast trends S. by W. ½ W. and South [*S.* ½ *E.* and *S.S.E.*], and the distance is 25 leagues. To the North of the Cape is *Angra Fria*, or Frio Cove. Here the coast is low, with white sand, and you will have 30 fathoms, oozy ground, at a league from the shore. The land near the Cove is very steep, and known by three hills, the middlemost of which is the largest. The coast, from Cape Negro to this bay, is thinly inhabited, and belongs to the Cimbebas, a black nation.

From Frio Cove, the coast being all fair, with double land, trends S.S.E. [*S.E.*] 6 or 7 leagues. The sea side is full of trees, with sandy hills; you will have 16, 17, and 18 fathoms of water within 2 leagues from the shore: this part of the coast is what the Portuguese call *Praya das Neivas*, or Snowy Beach.

The coast hence trends a long way to the South [*S.S.E.*], and has never yet been well described: for even Captain Owen's survey is here imperfect. The latter, however, exhibits the coast, between the parallels of 19° 40′ and 21°, as having a low sandy shore rising into elevated and mountainous land, with soundings of 20 to 16, 12, and 10 fathoms near the edge of the beach.

CAPE CROSS, OR CAPE SIERRA.—In lat. 21° 50′, lon. 13° 57′, is *Cape Sierra*, or the *Cape Cross* of the recent charts. The shore is here similar to that which has just been described, and that southward of this Cape is distinguished by white sandy hills. Cape Cross is in the form of a truncated pyramid of moderate height. It is readily known by its blackish colour. *Cape Cross Bay*, to the North of it, has good anchorage: the *Bay da Serra*, to the South of it, is entirely open to the S.W. winds and swell. It is, however, used by whalers.

At about 15 miles northward of Walvisch Bay, a river was discovered by *L'Espiegle*, in 1824, and named *Somerset River*; this is the *Swakop*, or Bowel River, flowing from the eastward. Near its mouth, and extending as far as the eye could reach, are the lofty mountains, mentioned below, called the *Quanwas*, or Clay-trap Mountains (Mount Colquhoun), reaching from 2,500 to 3,000 feet above the sea, and forming a conspicuous land-mark on making the coast.

On proceeding southward to Walvisch Bay, the soundings on the coast were found to be dark and muddy sand, the action of which upon metals turns them black, and the effect upon the leads and chain cables makes them appear as if painted.

In lat. 22° 32′, a mountain of considerable elevation was seen, Mount Colquhoun, a remarkable hill with several peaks on the top, which are sharp and inclined toward the *N.E.*; and near it a large body of water, forming a kind of lake, about 40 feet above the level of the sea; and here were the first symptoms of vegetation met with since leaving the Cape of Good Hope, a few stunted bushes and patches of heather being scattered around; but, beyond this, the coast northward again assumes the same arid and monotonous character.

WALVISCH BAY.—At 23 leagues S. ½ E. [*S.S.E. ½ E.*] from Cape Sierra [or Cape Cross] is the entrance of a convenient harbour, forming the South part of *Walvisch* or *Walwick Bay.* This harbour was surveyed by the officers of H.M.S. *Leven*, under Captain Owen, in 1825. Its western side is a sandy peninsula, 4 miles in length, terminating to the North in *Pelican Point*, where the breadth of the entrance is 3½ miles. All the shore is of sand, and the soundings regular, from 7 to 5, 4, and 3 fathoms. Pelican Point is in lat. 22° 52′ 30″, lon. 14° 27′.—*Variation*, in 1826, 23° W. The interior presents a range of desert sandy mountains.

A particular plan of the Bay was made by a British officer in 1786, which represented it as 8 miles broad and 4 deep, taking the depth from two little mussel islets on the coast, which are, perhaps, the *Farilhoens* of the Portuguese charts. Within the peninsula, on the western side, the water is shoal. The coast at the bottom of the Bay low and marshy. From a lake here is a road to a native village, distant about 5 miles. High water, on full and change days, at 1^h 50′.

In the month of November, 1825, during hazy weather, every object in the vicinity of Walvisch Bay appeared much distorted by refraction from the dry shining sand, constituting the back ground. Some ribs of whales which had become fixed in this sand, with one end standing upright, appeared like the masts of ships of considerable burden; while common gulls resembled large sheep, when seen from the distance of a mile. *Pelican Point*, the N.W. extremity of the Bay, was thickly covered by the wrecks of whales, with all kinds of fish, and sea fowl, in every stage of decay, from which it is evident that strong westerly gales sometimes drive the sea over this natural breakwater. Captain Alexander saw, on the beach, the boxes of several sailors who had been murdered by the natives, probably for interfering with their women.

Between Walvisch Bay and Elizabeth Bay, in lat. 26° 55′, many great trees were seen lying high up the beach; and it is a remarkable fact that, as not the slightest vegetation exists on any part of this coast, much less trees of any magnitude, these must have been brought by the strong perennial S.W. wind and current from regions unknown. (Probably from the Indian Ocean.)

Captain Morrell,* in his third voyage, thus describes Walvisch Bay:—"The entrance to the Bay is 1 league, running to the South 2 leagues; 1½ leagues of which is navigable; and the depth of water in going in is from 12 fathoms to 3, mud and clay bottom, near the head of the Bay.

"The East side of this bay is formed by moderately elevated sand hills near the sea shore, and the West side is formed by a very low sandy peninsula, not more than 15 feet above the level of the sea at any place. The isthmus is very narrow, it being not more than 20 rods from the head of the Bay to the sea shore. The peninsula, however, is from 1 to 3 miles in width. In entering this bay, it is necessary to give the West point a good berth of nearly half a mile, on account of a sand bank that runs from it, in a N.N.E. direction, about a quarter of a mile, on which there is only 6 feet of water at low tide. After doubling this point, in advancing up the Bay, it is proper to give the western shore a berth of one-fourth of a mile; taking care not to approach it any nearer, as the water becomes shallow very suddenly, to from 5 fathoms to 2, and even to 4 feet, at low water. This is a mud bank, which stretches all along the western and southern shore of this bay; but the eastern shore is bold, 1 cable's length from the beach, nearly to the head of the Bay, The water is entirely smooth all over the Bay, and consequently it is a safe as well as a spacious harbour at any season of the year.

"The interior of the country to the eastward of the Bay presents a dreary range of desert sandy mountains and valleys, entirely destitute of soil, or vegetation of any kind, for 20 or 25 miles inland, with the exception of a few valleys that lie to the E.S.E. and S.E. of the head of the Bay, in which are a few Hottentot villages, with small herds of cattle and sheep, that feed on such coarse grass and shrubs as they can pick up.

"About 3 miles from the S.E. part of the Bay, on a S.E. by E. course, is a small village, where fresh water may be had from many springs in the valley. This water possesses a peculiar flavour, not unlike sassafras tea, and it is not in the least brackish. The village contains about 250 inhabitants, who often visit the Bay for the purpose of fishing. I have frequently had them on board the vessel, and have purchased from them cattle and sheep, which were in fine order. I uniformly found them to be a very friendly, harmless, inoffensive people; but very indolent and filthy, and somewhat given to thieving.

---

* Narrative of Four Voyages by Captain Benjamin Morrell, New York, 1832.

"This bay and its vicinity, in the months of August and September, are visited by great numbers of right whales (hence its name) which resort here for the purpose of bringing forth their young. Fish also, of various kinds, and in great abundance, may be caught here with a seine; but it is difficult to haul the seine on shore in any part of the Bay, excepting the eastern shore, on account of the mud flats. Ships visiting this bay for the purpose of taking whales, in the months before named, should anchor about half a mile within the Bay, under the western shore, in 5 fathoms of water, muddy bottom. In this situation they will be enabled to see whales from the mast-head outside the peninsula, and at the same time lie in safety, as northerly winds never blow here more than a royal breeze, and that for a few hours only. The wind blows nearly all the time from the South; and often, in the afternoon, a single-reef breeze. But it is generally calm at night, and in the fore part of the day."*

Captain (afterwards Sir) J. E. Alexander reached this place over-land from the Cape of Good Hope, in April, 1837. He says:—Walvisch Bay extends along-shore, as it were, for 20 miles. A long spit of sand, terminating in Pelican Point, forms its S.W. shore, and offers an effectual barrier to the roll of the South Atlantic. Vast flocks of pelicans, flamingoes, geese, gulls, &c., frequent this sheltered bay. To the East of the Bay there are long ridges of sand, covered here and there with dark bushes: behind these ridges, and in the valleys, brackish water is everywhere to be found, by digging. Between the ridges and the sea, where they halted at a pool, there was a plain covered with reeds and grass; whilst the heavy roar of the breakers broke on the ear continually from the West. Morning and evening the atmosphere was obscured by a grey fog, confining the view of the landscape, which, in consequence of the mist and the dimly seen sand-hills, had a peculiarly wild and dreary appearance.†

Lieutenant Ruxton says, "I examined the Swakop, or Somerset River, which is 40 miles to the North of the Kuisip, which runs into Walwich Bay. The Swakop was not visited by Sir J. Alexander, although it was by far the best route he could have followed on his return.

"When it flows, it must be a considerable river, the mouth being 500 yards wide; and it must *once* have flowed with great force, having worn its way through rocks of granite. Its mouth is blocked by a bar of sandy beach, and covered with reeds and flags. A species of hemlock grows in its bed, which, to 20 miles from its mouth, is dry. Water is, however, easily procured a few inches from the surface. Passing the first 20 miles, there are large pools and abundant pasture for many thousand head of cattle, which increase the further you proceed to the eastward.

"It is by the route of the Swakop that the natives proceed to and from the interior, it being perfectly practicable for oxen and waggons. It runs nearly due East. From its source (which, according to the natives, is in a mountainous country) to its mouth, a distance of 300 miles, it passes through a succession of fertile plains, lofty hills, and sandy deserts. Seventy miles from the sea coast, the desert changes into plains of fine pasture, which increase in fertility the further you advance, until, at the village where

---

* In the ensuing chapter of Captain Morrell's book, he gives an account of a journey he took into the interior, nearly 150 miles E.S.E. from Walvisch Bay. In this expedition he describes having seen immense numbers of cattle, "sleek and well favoured," besides three times the number of sheep. He also found copper, lead, and iron ores, and some indications of gold and silver. The natives treated him with kindness and hospitality. Upon his return to America, his views for speculation in these parts were treated with indifference, though it would appear now with great injustice. His journey in November and December, 1828, would have taken him to a portion of country traversed by Captain Alexander, in the expedition above mentioned, the account of which, in a great measure, agrees with that given by Captain Morrell, although Captain Alexander met with great privations, and at one time nearly perished. The latter was in this vicinity in March and April, 1837.

† Geographical Journal, Vol. viii. 1838, p. 14; "Alexander's Expedition of Discovery," *Vol. II., p. 78;* and "Explorations in Tropical South Africa," by Francis Galton, pp. 14—21.

Africana resides, the country is rich and fertile, covered with flowers and a luxuriant vegetation. In its course to the sea, it has worn its way through lofty granite rocks, which on its North bank stretch away in a perfect level for many miles.

"Although dry to appearance, the water, most certainly here, as in other rivers on the coast, steals silently along under the sand, and is everywhere procurable at a trifling depth below the surface. The alluvial soil is a black loam, in which are seams of nitrate of potash, in thin leaves, and which also is found in many places as a superficial deposit. At the mouth, rocks extend far out to sea, rendering it impossible that any boat could enter the river, even if there was sufficient water. Neither can a vessel lie with safety nearer than 10 miles from it."—*Naut. Mag.*, 1846, p. 12.

Porto d'Ilheo, or Sandwich Harbour, lies about 13 leagues to the southward of Walvisch Bay, in lat. 23° 30′. The *Ponta dos Ilheos* is said to be encompassed by reefs, stretching out to sea; and within this point is the harbour, which is small and has only 3 fathoms of water.

Captain Morrell says:—On Tuesday, the 18th of November, 1828, we arrived at the mouth of what is called Sandwich Harbour, said to have 3 fathoms of water in its channel of entrance. Although we found only 11 feet at high water in this channel, I have no doubt that there was a time, some years back, when its depth was full 3 fathoms, and that it has been filled up by drifts of sand, the movements of which, along this coast, forcibly reminded me of the snow drifts of my native country; every fresh southerly wind forming new sand-hills, exactly as new snow banks are formed at home by a fine, clear, cold North-wester.

This lagoon runs to the southward about 2 leagues, with 7, 5, 3, and 2 fathoms, nearly all over it. It is formed on the East by a high, white, bluff sand-hill; and on the West by a low sandy peninsula nearly level with the sea, with shoal water on the sea-board side for more than a mile to seaward. The entrance of the lagoon is very narrow, being not more than a quarter of a wile mide, and formed by two low sandy points.

Perhaps there is not a finer place on the whole coast than this for taking fish with seines. Many different kinds of fish resort to this lagoon; one of which bears a strong resemblance to our "streaked bass," and is as fat and delicate flavoured a fish as our salmon. There are many other sorts, equally good, but of smaller size. Green turtle also visit the sandy beaches for the usual purposes.

Alligator Rocks.—According to the observations made by Captain Wood, of His Majesty's ship *Garland*, in 1798, in lat. 24° 38′, a reef, called by him the *Alligator Rocks*, lies 6 leagues from the shore, with breakers to the S.W., 2 leagues at least. Hence the longitude about 14° 14′ E.

Captain Morrell sought, unsuccessfully for two days, for this reef; he therefore concludes that Bird Islet has been seen in a haze, and mistaken for a danger that does not actually exist. The extreme haziness of the weather, peculiar to this coast, might very easily have deceived Captain Wood; for frequently, on running along the coast not more than 1 league from the land, the sand-hills appear to be 5 or 6 leagues from the vessel.

HOLLAM'S BIRD ISLET.—Nearly on the parallel of this reef, at 1½ leagues from shore, is *Bird Islet*, or *Hollam's Bird Isle*, in lat. 24° 37′ 24″, lon. 14° 32′ 20″.

This little island is not more than a quarter of a mile in circumference. A reef of rocks runs off from it, in a S.W. direction, about 5 miles, on which the sea breaks at times very heavily. A vast number of right whales frequent this reef in the months of July and August; and a ship may lie at anchor on the North side of the island, in 10 fathoms water, all the whaling season, in perfect safety, if she has chain cables. This island is resorted to by seals, gannets, and penguins; and Captain Morrell took here the skins of 1,400 fur seals at one time, although the landing was very bad. The passage between the island and the continent is about 9 miles in width, free from hidden dangers, with a depth of water from 20 to 10 fathoms near the main land.

Hottentot Bay is 26 miles from Spencer's Bay. It is about 3 miles wide, and about the same in depth. Its S.W. point is low, and is prolonged by a reef for nearly a mile, on which the sea usually breaks. The bay affords good anchorage, and is well sheltered from the S.W. swell. There is abundance of fish, but no fresh water. Whales and seals frequent the bay, or did so formerly. It has been called *Sims' Bay*, and may be *Rae's Bay*. (See Ichaboe.)

It is probable that Bird Islet is the effect of some mighty convulsion of nature which has piled together, in an irregular form, loose blocks of stone, basalt, lava, and other volcanic productions. The waters around its shores, however, abound with many kinds of excellent scale fish, which may be caught with hook and line in great quantities. A few turtle, also, may be found on a small sandy beach on the East side of the Island.

SPENCER'S BAY, in from 25° 40′ to 25° 45′, may be known by Mercury Island, which lies off the middle of it, and is nearly a mile in length.

MERCURY ISLAND is about a mile in circumference, of an oblong shape, lying North and South, and is three-quarters of a mile North from the S.W. point of Spencer's Bay, and 1½ miles West from the N.E. point. Both passages are easy and free from danger; and the best anchorage is on the East side of the Island, about 150 fathoms from its shores, in 5 fathoms of water, sand and clay bottom. It is not advisable for ships to anchor to the South side of the Bay, as a heavy westerly swell heaves into it on the full and change of the moon; but let them anchor close under the Island, and they will be perfectly safe, in smooth water.

The South point of Spencer's Bay presents several high peaked rocks, nearly 600 feet perpendicular at the water's edge. Whales frequent this Bay in considerable numbers in the months of July and August. Seals of the fur kind also frequent the shores of Mercury Island; while its summit is thickly inhabited by penguins and gannets during their laying and incubation seasons. The shores and surface of the Island present many specimens of volcanic productions, as do also those of the continent in this vicinity, extending some distance into the country.

There is a Hottentot village about 40 miles on an E. by S. course from the head of the Bay, containing about 250 inhabitants, and situated in a fertile valley, watered by several springs of excellent fresh water. There are also four refreshing springs between the village and the Bay. The interior of the country abounds in cattle, sheep, deer, bucks, wolves, grey foxes, elephants, and ostriches, in greater numbers than it does farther South. There are many salt springs in the valleys at the head of Spencer's Bay, where salt might be manufactured in immense quantities, if properly attended to.

It was on Mercury Island that Captain Morrell lost one of his men by the sudden rising of the rollers, which washed them off the shore, while engaged in skinning the seals they had taken. This source of danger will of course be guarded against by a prudent commander, as they rise frequently without any previous notice.

Captain Morrell says, "I can also refute another erroneous statement respecting this coast. It is said that there is a dangerous shoal lying between 3 and 4 leagues to the West of Angra Pequena, in lat. 26° 35′ S.* But I can assert, with the greatest degree of confidence, that there is but one shoal on any part of this coast, South of Spencer's Bay, that lies more than 4 miles from the main land; and this one lies N.N.W. from Angra Pequena, or Santa Cruz, about 15 miles."

ICHABOE ISLAND is in lat. 26° 18′ S., lon. 15° 0′ E.† This island was the scene of a very remarkable commerce in the years 1843 and 1844. It was originally an immense deposit of guano, a production of the sea birds and seals. During the years stated it was the busiest place in the world; crowds of vessels coming hither to carry away this valuable deposit, which at last entirely disappeared about February, 1845. On p. 510 we have given a few remarks as to the physical conditions under which this mass of fertilizing matter had accumulated. As the first notice of it seems to be that given by Captain Morrell, and from whose description the trade arose, we subjoin his description of it.

"*October* 6, 1828.—From the anchorage between Possession Island and Angra Pequena, we steered once more to the North, and arrived at *Ichaboe Island* on Monday, October 6. This Island, which is about 1 mile in circumference, lies 8 leagues to the North and West of Angra Pequena, and not more than 1½ miles from the shore. On the East side of this Island ships may anchor in perfect safety, in 5 fathoms of water, sand and clay bottom, about 2 cables' length from its shore. The safety and convenience of this anchorage are owing to the following circumstances:—A point of land from the continent extends 3 or 4 miles into the sea, to the South of the Island; and from the extremity of this point a reef puts off in a N.W. direction, until it nearly meets a reef that projects from the West side of the Island. Another reef puts off from the N.E. point of the Island; consequently a bay is formed, in which a ship might lie all the year round in perfect safety and smooth water. But in coming to this anchorage, care should always be taken to pass round the North (?) end of the Island, giving its N.E. point a berth of half a mile, which will avoid all dangers. In working into the harbour, the shore on the main may be approached within 2 cables' length.

---

* According to Captain the late Sir James Athol Wood, R.N., a dangerous shoal lies 11 miles off from the shore of Angra Pequena, in about 26° 35′ South.

† At the period of the guano excitement a plan was received of an island, &c., called *Gallovidia Island*, by Captain Rae, who commanded the vessel of that name. It was subsequently discovered that the place was a suppressed account of Ichaboe itself, with erroneous latitudes and longitudes. Now, however, we incline to the supposition, that the bay was intended for Hottentot Bay to the northward, and the island confused with the account of that bay.

"This is a fine place for making captive the great leviathan of the ocean, the right whale, great numbers of which strike on this part of the coast about the middle of June. They are in the habit of playing about the reefs of the Island, and that which runs from the continental point before mentioned; and as the South wind generally prevails, there is no difficulty in getting the dead whale alongside the ship. Scale fish may be caught at the anchorage with hook and line, or at the bottom of the Bay with a seine, in great quantities; an abundance of cray fish may also be caught with a hoop net, all around the Island, within 50 fathoms of the shore.

"Eggs also may be obtained here in great quantities. In the months of October and November this Island is literally covered with jackass penguins and gannets, which convene here for the purpose of laying and incubation. The nests of the gannets are formed like those of the albatross, but are not so much elevated; while the jackass penguins lay their eggs in holes in the ground, from 12 to 30 inches in depth, which they guard with the strictest vigilance. I have seen them stand at the entrance of these holes and protect their eggs, or young ones, with the most resolute perseverance, until they were removed by superior physical strength. They frequently lay 3 or 4 eggs, but the gannet seldom lays more than two.[*]

"This Island is formed of volcanic materials (granite, slate-stone, and quartz), and its shores are resorted to by multitudes of fur seals; we took about 1,000 of their skins in a few days. *The surface of this Island is covered with birds' manure to the depth of 25 feet.* The S.E. part of the Bay, on the main land, directly opposite the Island, is the finest place on this part of the coast for jerking beef, it being only 4 miles from a Hottentot village and the springs of fresh water before mentioned, which will supply any number of cattle. Here also I travelled into the interior to a considerable distance, and found that, the farther I advanced to the N.E., the more numerous were the herds of cattle and flocks of sheep; while the skins of leopards, grey foxes, &c., could be obtained with the utmost facility, together with ostrich feathers, ivory, and other valuable products of the country."

This description, in many points, is correct; but our increased knowledge of the Island has supplied better directions, and it has been surveyed by Captain M. B. Wade. Though the interest in it has passed away, we here preserve them as being a memorial of a remarkable incident in maritime commerce.

The best anchorage is on the eastern side of the Island, with it bearing W.S.W., and N.W., from one-fourth of a mile to 1¼ miles distant. At 2 miles E. by N. from the North point of the Island is a rocky spot of only 4 feet water; it is 1 mile off-shore. Three miles S.S.E. from the Island is a small bay in the main land, where there is difficult landing on a sandy beach; from this there is a pathway to a village of about 50 inhabitants, 8 miles distant, over a bad road through the desert; this is the nearest place where water can be procured, and here it is blackish and scarce. On the coast, 3 miles E. by N. from the island, is a range of black cliffs about 30 feet high. The strata of rock on-shore dip to the northward, so probably anchors will hold best with South winds.

Throughout the whole neighbourhood the stream almost constantly runs to the *northward*, about 1 mile per hour. At the anchorage nearest to the island, the first half of the ebb runs faintly to the southward; this probably is an eddy. The prevailing wind is from the South (S.W. by S. compass); consequently the best passage to the anchorage is through the *South channel* (not North, as recommended by Captain Morrell), having the advantage of wind, current, and clearer ground.

During November, December, and January, the thermometer generally ranged from

---

[*] For an account of the habits, &c., of these birds, see page 38, and also pages 143-5.

55° to 65° at 1^h p.m., occasionally at 50° or 70° on board the ship in the shade. Water generally 50° to 52°, sometimes 55°. Barometer ranged during the above months, 30·10 to 30·25.

The rollers are similar to those at St. Helena, &c., as described on pp. 33—36. When they are heavy, they break above a mile from the island, but usually about half a mile from it.

Boat landing is sometimes difficult and even dangerous, particularly after heavy gales outside, and about the times of new and full moon. On such occasions a surf recoils from the island, and breaks from 10 to 12 fathoms from its eastern shore; but outside of that break, and where a vessel must lie, the water is quite smooth.

At Ichaboe Island it is high water, at full and change of the moon, at 2 15′. Rise on springs, 7; neap, 3 to 4 feet.

The breeze is frequently strong from the S.W.; no rain, but dense fogs and heavy dews; occasionally thunder and lightning. The dryness of the air is so great as to produce disagreeable effects on the face, mouth, and eyes.

Ships bound for Ichaboe should make the high land of Angra Pequena, and, taking advantage of the wind and current, sail along shore, keeping a moderate distance from the land, perhaps about 3 or 4 miles.

It is to Captain Andrew Livingston, of Liverpool, a gentleman to whom nautical science is largely indebted, as will be noticed in many of the preceding pages, that the credit is due for having made known to some Liverpool merchants the fact of the existence of guano upon Ichaboe, which knowledge he had acquired from Captain Morrell's Narrative. At his recommendation the *Gallovidia* schooner was sent out; but from some untoward circumstances, she returned without a cargo, after examining the island. The first cargo was procured by the late Captain Farr, in the *Ann*, of Bristol, who arrived at Ichaboe in March, or April, 1843, upon Mr. Livingston's representation. Captain Livingston, unhappily, has not benefited by the information which has conferred such great wealth and service to the mercantile interest. Many more vessels reached there in November, 1843, but were unprovided with materials for the stages, &c., necessary for embarking the cargo; this difficulty was soon remedied. The arrivals kept rapidly increasing, so that it was found necessary to form a committee to adjust the differences arising among the various vessels. This was in March, 1844. Previous to this, in December, 1843, Captain M. B. Wade was chosen commodore and arbiter. In May, 1844, forty-five vessels were present, and H.M.S. *Thunderbolt* arrived at the island. H.M.S *Clio* afterwards arrived, and during the conclusion of the occupation, H.M.S. *Isis*, Captain Sir John Marshall, remained present. In August, 1844, 300 vessels were present; in September, about 200: and at the commencement of October there were present at Ichaboe about 6,000 seamen and labourers. The guano, which, in September, had only been removed to the extent of 90,000 tons, was fast now disappearing; and from September, 1844, to the middle of February, 1845, so great was the number of vessels loading, and such the activity of their crews, that the remaining 110,000 tons were entirely removed. Vessels continued to arrive, and in the month of January, 450 vessels were present.

The Island of Ichaboe, when first visited in November, 1843, was literary covered with guano; that article being highest at the North end, and gradually declining towards the South end. The guano in the northern pits, soon after they were commenced, measured about 40 feet in depth, decreasing gradually to about 10 feet at the South end of the island. From data which cannot be very incorrect, the whole quantity of guano removed from the island, was about 200,000 tons. It was of very different quality, the best being in the northern pits. The N.W. corner contained a considerable quantity, the produce of the gannet and cormorant; the southern end partook very much of the nature of Possession Island guano, and apparently from the same cause, viz., decayed seals as well as their droppings. The vast body, however, of the guano was undoubtedly the produce of the *Penguin;* about one-half of it, it is believed, being the droppings of that bird, and the other their decayed bodies. The primitive granite rock, which everywhere forms the surface on which the guano was deposited, rises highest on the S.E. side of the island, being lowest at the North end. The North end, from the prevailing southerly winds, is the lee end, which, by the birds resorting there for shelter, may account for the greatest height of the guano at that end. The highest part of the rocky surface of Ichaboe is about 40 feet above the level of high water.

Lieutenant *Ruxton*, who visited Ichaboe in March, 1845, states that notwithstanding a two years' occupation, and the countless penguins, cormorants, &c., which had been destroyed, these birds were again flocking to the place, and depositing their eggs afresh. So that, at some future age, Ichaboe may again be the resort of ships for procuring guano.

ANGRA PEQUENA* (*Small Bay*), a break of the land, forming several little harbours, is 17 leagues to the southward [*S. by E.*] of Spencer's Bay. Its outer point on the S.W. (*Pedestal Point*) is distinguished by the pedestal of a marble cross, erected by Barth. Diaz, in 1486, and still conspicuous from the offing. Of Pedestal Point the lat. is 26° 38′ 24″, lon. 15° 7′ 25″ E.

At a league to the eastward of Pedestal Point is *Angra Point*, off which is a cluster of rocks, extending half a mile N.N.E. from the Point, with a channel of 4½ fathoms between them and the Point; but it is safest to go round to the northward of them, giving them a berth of half a mile. The coast between them forms a cove, called *Shearwater Bay*, open to the North and N.W.; but in the middle of which there is anchorage in 6 and 7 fathoms, bottom of fine sand, and sheltered from the S.E., South, and S.W. winds.

Within Angra Point, on the East, is an inlet extending 5 miles to the southward, and the entrance of which is half a league broad between Angra Point and Shark Isle. In this inlet, off Shark Isle, is good anchorage in 4 and 3½ fathoms, or a mile higher in 2¼ fathoms, bottom of sand. At the head of the inlet is good landing.

The N.E. point of Angra Pequena is 6¾ miles E.N.E. [*N.E.*] from Pedestal Point. From this point three islands extend in a true South direction; the southernmost of which, *Shark Island*, is 5 miles from the point, and forms the N.E. side of the inlet above mentioned. There is no channel to the southward of it to the harbour on the East side. From its North point extends a reef for one-third of a mile; and from the South point of *Penguin Island* there is a similar reef projecting; the channel between them has a depth of 6 fathoms in the middle, and is nearly half a mile wide. One-fourth of a mile East from the North Point of Penguin Island is the *Tiger Rock*, which renders the anchorage in this part unsafe, as the rocks around do not always show themselves.

Between the main land and Penguin and Shark Island is *Robert Harbour*, a good and sheltered anchorage, in 5 fathoms, clay bottom. It may be entered and left with perfect safety, either from the North or South end of Penguin Island, but the southern passage is to be recommended. The best situation to anchor in on the East side of the North Island is near its centre, about 2 cables' lengths from its shore, leaving a single rock, that lies level with the surface of the water and nearly in mid-channel, about half a mile to the North of this passage.

Seal Island lies about a mile North of Penguin Island, and like the other two is about a mile in length. The bay within, or to the eastward of, this island is about 1½ miles broad; while that to the southward, or Robert Harbour, is about a mile.

No fresh water is to be found in any part of these bays, and no vegetation is found within some miles; all is dry sand and rocks. Captain Morrell states that fresh water is to be found to the North of Angra Pequena, about 10 miles distant. Here there are many fine springs of excellent fresh water, about a mile from the sea coast, where any quantity of the pure limpid element can be obtained for a dozen ships at a time. Also, by travelling 40 miles due East from the sea they will come to fresh water, and will meet with Hottentots, who are very friendly and may be trusted. This excursion, however, thus far is not pleasant, being over a barren, sandy desert; but every mile you proceed further the prospect brightens, the soil becomes rich and fertile, and the country abounds with all the productions of the climate. The inhabitants soon become numerous, and the grassy plains are covered with immense herds of fine cattle. The country to the N.E. of Angra Pequena abounds with ores and minerals, which, together with ivory, ostrich feathers, and other valuable articles, can be had low. The Bay of Angra Pequena affords an immense quantity of excellent fish of many different kinds, which may be caught either with a hook and line or a seine.

---

* Lieutenant Ruxton, on an overland journey he made in 1845 from Ichaboe to Angra Pequena, found on the beach between these places the trunk of a red cedar lying on the beach. The origin of this drift timber affords room for speculation, as there is not a tree growing within 300 or 400 miles North or South of the spot. It may have been brought down by the Orange River and then drifted northward, or perhaps more probably brought by the southern connecting current from the coast of South America.—See Naut. Mag., Jan., 1846, p. 8.

"These islands have once been the resort of immense numbers of fur seal, which were doubtless destroyed by the same plague which made such devastation among them on Possession Island, as their remains exhibited the same appearance in both cases. Shags and penguins had now taken entire possession of the two islands, in such numbers that ships might procure any quantity of their eggs in the months of September, October, and November, and have them entirely fresh, by clearing out the old from the nests, and gathering the new every morning. These islands present the appearance of volcanic productions of an ancient date, as do some of the mountains in the interior of the main land." —*Captain Morrell.*

Nov. 21, 1825.—A heavy S.E. gale set in, before which the sloop *Barracouta* was carried with great velocity. In the afternoon the remains of the cross erected by Diaz, on the southern extremity of Angra Pequena, was seen. It had been wilfully cast down within the last 40 years. The gale continued when the *Barracouta* left Angra Pequena, and by the next morning she had run to the northward upwards of 130 miles; having in that distance passed the limit of the rocky and sterile country, and come abreast of the desert. This rises into lofty hills of light coloured sands, having here and there a small rocky patch, with a few tufts of parched grass, breaking on the dull monotonous view. In some parts of this desert the sand-hills rise to a great height, without a spot of verdure to relieve the eye.

Angra Pequena was surveyed in the boats. The surrounding country is one continued sand, without a shrub so far as the eye can see. The interior bears the same aspect, and no natives were seen.

At Angra Pequena in the forenoon there are light northerly winds; in the afternoon, fresh S.W. sea breezes. It is high water, on full and change of the moon, at 2^h 30'. Springs rise 8 feet. Variation, 27° W.

Bross or *Sirène Island*, a black rock, lies 1 mile South of Pedestal Point, and will serve as a good mark for Angra Pequena. It faces the N.W., and on one of its peaks, called the Grand Vigia by the whalers, is a white mark called the Cross (M. le Troude). Between the point and the island is a small sandy bay without any shelter, called *Shiermont's Bay. Mermaid* or *Merman Island* is 3 miles South of Brass Island, connected to a rocky point to the South by breakers. It is a volcanic mass, protecting a small bay, *Mermaid Bay*, open to N.N.W., but sheltered to the South and East by the main land. It affords middling good shelter. A sandy beach succeeds to the southward for 5 miles, at the end of which is a black islet, *Ilheo Secco*, or *Brisant's Island* (Breakers' Island), close to the North point of a rocky bay, named after the islet; it has no shelter. At 3 miles farther on, the coast still rocky, is the projecting point of the North side of Elizabeth Bay, called *Ludovic Point. Ludovic Island*, of volcanic formation, is half a mile from the North side of Elizabeth Bay. To the S.E. of it are three islets or rocks, close together, which serve to protect the anchorage within. A fourth islet, in front of the preceding and close to the shore, is prolonged to the S.W. by a reef a mile in length, which joins to the reefs of Ludovic Island. To reach the anchorage, pass to the North of Ludovic Island. A little to the North of the island is a remarkable sugarloaf mountain, called *Monte Deserto*, which serves as a good landmark for Elizabeth Bay.

ELIZABETH BAY.—At 5 leagues to the southward of Angra Pequena is ELIZABETH BAY, a very slender bay on the coast, sheltered by Possession Island, which lies to the West of it. There are two anchorages in this bay, that to the N.E. of Ludovic Island above described, between it and the coast, and the other to the East of Possession Island. The isle is 3½ miles in length, and has several rocks, above and under water, at its North end, with sunken rocks at its South end. The space between it and the shore is from 2 to 3 miles in breadth, and has in mid-channel from 11 to 7 fathoms. Within the middle of the island a vessel may anchor in from 6 to 4 fathoms, but is exposed both to northerly and southerly winds. On the East side is a landing place for boats. Here the tide, on the full and change, rises about 6 feet. The position of the South point of Possession Island, as given by Captain Owen, is lat. 26° 56' 30", lon. 15° 12' 30".

POSSESSION ISLAND is 3 miles in length, and near a mile in width, forming on the East side a concave curvature, in which ships will find good anchorage in from 7 to 4 fathoms, sandy bottom and smooth water. The landing is also good in front of the anchorage, near the centre of the island, half a mile from the beach. At this place, in the months of August, September, and October any quantity of penguins' eggs may be collected, and fish of an excellent quality may be caught in great abundance about the shores.*

There are a few sunken rocks lying off the South point of the island about three-quarters of a mile, on which the sea generally breaks. There is also a reef running off the N.E. end of the island about 3 miles, on which the breakers are frequently very heavy. These reefs both incline to the eastward, which promotes the smoothness of the water in the harbour. Between the island and the continent, or rather between the extreme points of the reefs and the main land, the channel is 3 miles wide, with from 15 to 10 fathoms water, sandy bottom, and free from danger. Ships intending to anchor at this island while the South winds are fresh, should approach the anchorage from the South, and leave it on the opposite passage.—*Captain Morrell.*

It is said that there are some sunken rocks inside of Possession Island, not shown on the Admiralty Chart, on which an anchor is laid down almost on the very spot where there is a rock with only 7 feet water over it.†

Point Bol is the southern limit of Elizabeth Bay. It is rocky, and close off it is an islet of the same name. Boyd's Island, a volcanic formation of a quarter of a mile in circuit, is one-third of a mile S.W. of Bol Island, to which it is joined by reefs. *Plum Pudding Island* is 3¾ miles from Boyd's Island, the coast between them being bestrewed with rocks, which are visible from the offing. Plum Pudding Island is in the form of a round cap, red at the top. Boyd's and Plum Pudding Islands are called *Albatross Rocks* by Captain Owen.‡

From Elizabeth Bay to Cape Voltas, or *Winding Cape*, the coast trends South and S.S.E. [*S.S.E.* and *S.E.*] 44 leagues. The *Angras Juntas*, or Namaquas Bays, lie about halfway between. Between Elizabeth Bay and Angras Juntas the coast has been found rocky, and without the least sign of water or vegetation. The only animals seen were wolves, although the tracks of many others were found, particularly of the lion and buffalo; on all parts of the coast, near the anchorage, were found the bones of whales in great abundance.

Whale Bay is in lat. 27° 22′, and is merely an indentation of the coast, without any shelter. Landing is easy in the South part of the Bay, and cattle may be got from a Hottentot village, 12 miles inland.—(*Captain Livingston.*)§

ANGRAS JUNTAS.—Captain Morrell says:—At *Angras Juntas* there is a small bend in the land, running in to the eastward about a mile, the width of its mouth being about a mile. Here ships may find tolerable shelter, with southerly winds; and it is likewise a convenient place to have communication with the Hottentots, some of whom reside about 5 miles N.E. of this bay. There is a small rock that stands to the S.W. of the South point, about 2 miles, with deep water all around it.

---

* "On the surface of this island I saw the effects of a pestilence or plague which had visited the amphibious inhabitants of the ocean with as much malignity as the Asiatic cholera has the bipeds of the land. The whole island was literally covered with the carcases of fur-seal, with their skins still on them. They appeared to have been dead about five years, and it was evident that they had all met their fate about the same period. I should judge, from the immense multitude of bones and carcases, that not less than half a million had perished here at once, and that they had all fallen victims to some mysterious disease or plague."—*Captain Morrell.* Subsequently, upon witnessing the phenomenon of a sand-wind and a moving pillar of sand at Angra Pequena, which, passing near his vessel, raised the thermometer to 113°—"This startling phenomenon induced me to waver in my former opinion respecting the visitation of a plague or pestilence on the unfortunate seals before mentioned. Is it not more probable that they were overwhelmed and suffocated by one of these sand-spouts bursting upon them, accompanied by the sultry, stifling sand-winds which created it? Such a cause would be more than sufficient to produce the effect alluded to—the simultaneous destruction of millions of these amphibious animals, assembled on the surface of the two islands at the head of this bay (Augra Pequena), which are literally covered with the decaying carcases of the victims, with their skins still about them."

† A dangerous rock, called by its discoverer, Captain Michel, the *Heliopolis Rock*, lies in the North part of the anchorage, 2¼ miles North of the S.E. end of Possession Island.

‡ The description, &c., of the coast from Walvisch Bay to this have been corrected from the Instructions of M. le Capitaine *Saisset*, of the French Marine.—*Annales Hydrographiques*, 1850.

§ *Naut. Mag.*, 1844, pp. 309.

At the entrance of this bay there are 14 fathoms of water, which gradually lessens to 5 fathoms, about half a mile from the bottom of the bay, sandy bottom. But the best anchorage is under the South shore, one-fourth of a mile from the point to the S.W., in 6 fathoms, sandy ground. This place is situated in lat. 27° 47′ S.

Northward of the Orange River, which is in lat. 28° 38′, the coast presents a chain of islets and rocks extending in-shore, and bearing the most fantastic shapes. In particular, there is one granitic rock, in lat. 27° 20′, which seems originally to have been of some height and extent; but the sea or some other cause has carried away the whole of its centre, excepting a surface of about 20 feet deep, which rests on the two extremities, leaving between them a vast archway or natural bridge, upwards of 100 feet in height, and apparently capable of allowing a ship to sail under without lowering a mast.

A very heavy surf was seen on the Bar of Orange River and along-shore. Although a vast space of water was seen over the foaming bank, yet no entrance for a boat could be found.

The **ORANGE** or **GARIEP RIVER** is the largest river of Southern Africa; it rises on the eastern side of the continent, and its mouth is in lat. 28° 38¼′ S., lon. 16° 27½′ E. Captain Sir Jas. Edw. Alexander visited the mouth of it in his expedition. He says that the land is flat about its mouth, and on the North side is good pasture. The breadth of the entrance, at the beginning of November, was about 170 yards, whilst inside was a lake about 4 miles across, and abounding in wild-fowl. The air was darkened and filled with the cries of wild geese and ducks, flamingoes, pelicans, gulls, &c. Here is most excellent shooting ground for the sportsman, and "harder" and "springer" fish abound for the seine.

"I saw no rocks at the mouth of the Orange: there is probably a shoal of sand outside; but, with care, it seems that the mouth of the River could be entered by a schooner. Copper ore, of extraordinary richness, is found near the South bank, about 4 days' journey from the mouth, and iron ore is also abundant in its neighbourhood. Honey is found in very large quantities about the Orange River, particularly in December and January. The climate is very healthy for Europeans."

The fact that the Orange River is (perhaps) hopelessly barred, is a very serious drawback to the vast resources which exist in the country it drains; were it otherwise, it would be the most important river of South Africa. Extensive and most rich copper mines have been discovered near its banks, and nothing but the means of transport and embarcation prevents them becoming the source of incalculable wealth.

The coast between Orange River and Voltas Bay is very low, sandy, barren, and desolate. It retains this appearance for some distance from the shore; but after running back 6 or 8 miles, it begins to swell into hills; and still farther back it rises into lofty mountains, which stand on each side of the River, on the banks of which are a few Namaqua villages. The wealth of the inhabitants consists of herds of cattle and flocks of sheep.

THE CAPE COLONY.

The Cape of Good Hope was discovered by Bartholomew Diaz, in 1487, who named it *Cabo Tormentoso*, or the Stormy Cape, on account of the boisterous weather which he experienced near the coast, which prevented him from making the land. But John II., King of Portugal, entertaining no doubt of his having found the long desired route to India, gave it a name of better omen, viz., "The Cape of Good Hope." Accordingly, his successor, Emmanuel, despatched Vasco de Gama, who, in 1497, first proceeded round it to India.

After the discovery of the Cape, the Portuguese fleets continued for several years to resort to various bays of the present colony for the purposes of refreshment; but they never took any steps for the formation of a settlement, and their ships were afterwards chased out of the Indian Seas by their indefatigable rivals, the Dutch. In 1614, the English attempted a settlement with a few convicts at Robben Island, in Table Bay, but it was soon broken up. In 1620, the English finding a Dutch fleet in Table Bay, took formal possession of the place in the name of their sovereign, James I.; but, excepting this act, no further step was taken by the English government. In 1648, Van Riebeck, a surgeon, touched here on his homeward passage; and on his arrival, induced by the splendour of its botanical riches, he induced the Dutch East India Company to form a settlement here, as a rendezvous for their vessels. Accordingly he sailed as the founder of the new colony, where he arrived on April 6th, 1652.* He proceeded to purchase the territory of the Hottentot chiefs, and the settlement continued to spread and flourish. After a peaceable possession of the colony by the Dutch for 143 years, possession was taken of it by the English on the 16th of November, 1795, in consequence of the injunctions of the Prince of Orange; but at the Treaty of Amiens, 1801, it was ordered to be restored, which was accordingly done on February 20th, 1803. It was again taken on January 10th, 1806, and was finally ceded to the English in 1815. Much has been written upon the destruction and disappearance of the aborigines since the European rule, but it is evident that it is to be attributed to mere native restlessness and ambition. It is now a Crown Colony, and its affairs are administered by a governor residing at Cape Town, and a lieutenant-governor, who has his seat at Graham's Town in the Eastern District. The present population of the Colony is said to be 161,484, but really amounts to 220,000.

In estimating the indications of the barometer at the Cape of Good Hope, the average height of it ought to be taken into account: according to Mr. Webster this is 30.23 inches; the maximum being 30.6, and the minimum 29.7. It has a higher range in winter than in summer. There is a remarkable difference between the height of the barometer at Cape Horn and at the Cape of Good Hope; at the former the mean of the year is 29.3, or 29.4, so that the difference between the two places is nearly one inch. Upon this subject the reader is referred to Mr. Webster's "Narrative of the Voyage of the Chanticleer," Vol. I., pp. 316—320.

For the Seasons and Winds at the Cape, see pp. 18 and 19. For the *Mirage*, or refraction of the atmosphere, p. 45.

CAPE VOLTAS, in lat. 28° 44′, is 2 leagues to the southward of Orange or Gariep River. According to Captain Morrell, Cape Voltas is a high bluff point, projecting into the sea; and there are several rocks lying about half a mile to the West of it, beyond which there are no dangers. About 1 mile North of the Cape there is a small bay, not more than 2 miles in length, and 1½ in width; within which the anchorage is not safe, as the ground is foul, and heavy rollers are continually heaving in from the westward at all seasons of the year. Ships, however, which are in want of fire-wood, may lie off and on, and obtain any quantity from the head of the bay, where they will find immense quantities piled up on the beach, which come down the Orange or Gariep River.†

The land around the Cape, and to the South as far as the Koussie River, is high on the sea-board, running back into elevated mountains. The hill-sides are covered with very good grass for grazing cattle, but the summits of these eminences are one mass of volcanic productions.

It has been said that there is no fresh water to be had on this coast North of Cape Voltas, but this is an error, as any quantity can be had in Voltas Bay in the rainy season, without the trouble of searching for it under ground. But by digging, fresh water may be had at all seasons of the year at a short distance at the head of the bay, where the landing is very safe and convenient, sheltered by two small islands lying close to the beach, inside of which the water is perfectly smooth. This is, also, a fine place to procure bullocks' hides, fox skins, leopard skins, ostrich feathers, and many other valuable articles.

Cape Voltas is commanded by two high hills, called the *Bramidos Mountains*, the highest of which is remarkable for the regular and rounded form of its summit.

At 15 miles S.S.E. of Cape Voltas are two rocks nearly awash, lying 3 miles off shore, on which the sea usually breaks. They are called Cape Voltas Rocks, but are, probably, the *Socos Rocks* of the old charts.

From Cape Voltas the coast trends South [*S.S.E.* ½ *E.*], 28 leagues, to the *Koussie*

---

* It was the practice of captains of vessels visiting the Cape for live stock, previous to the occupation by the Dutch, to bury letters and despatches under large stones, on which was inscribed the name and date of the arrival of the vessel. Many of these are still preserved at Cape Town; and some few years ago, on removing the earth to repair a drain in one of the principal streets, one of these memorials was dug up, dated 1622 and 1629, with this notice added, "Heare . under . look . for . letters."

† This is also perhaps the origin of that drift wood mentioned on p. 513 preceding.

River, where some Hottentots may be found, near the parallel of 30°. The space between is very hilly, and to the southward appears in high broken mountains.

The *Koussie* or *Kowsie River* may be entered in boats, but only at high water. It is closed at times, however, in the dry season, by the shifting of the sandhills in windy weather. This may well be called Salt River, as the salt water runs up it about 15 miles, 10 miles of which is very shallow. This is the northern boundary of the Cape *Colony.*

The coast continues in the same direction 30 leagues more to the southward, or lat. 31° 21′; in which space are some small rivers and extensive sandy plains. The rivers are, *Zwarte Lintje,** 6½ leagues southward of the Koussie, in or about lat. 29° 56′, and *Groene River*, in 30° 52′. Between these, in about lat. 30° 20′, is *Rooe Wall* (*Red Wall*), or *Mitchell Bay*, surrounded by cliffs of red sandstone, hence its name. It is at the mouth of the *Spook River*. There is good anchorage for schooners and small craft in this Bay.

From the point of coast above noticed, in lat. 31° 21′, the coast trends more to the eastward; and at 8 leagues south-eastward from that point we find the mouth of *Olifant* or *Elephant River*, in 31° 37′ S. Four leagues southward of this is a cove named *Donkin's Bay*, the South point of which is Cape Donkin, in lat. 31° 54′ 12″. A little sandy cove, *Lambert's Cove*, is 3 leagues true *South* from Cape Donkin; and a small, though high and bluff headland, *Cape Desejado*, or *Deseada*, is nearly 5 leagues in the same direction from Lambert's Cove.

ST. HELENA BAY.—Paternoster or St. Martin's Point lies in lat. 32° 42′ 12″. This point forms the western side of St. Helena Bay, which lies between it and Cape Deseada; the distance between being 10 leagues. In the Bay are regular soundings of 12 to 10 fathoms, decreasing to 6 and 4 near the shores. The ground is mostly of sand and shells. It is, however, to be observed, that the whole of the western shore, to the bottom of the Bay, is bordered with a continued reef of rocks, half a mile in breadth. This reef terminates at *Berg River*, which falls into the bottom of the Bay, and has a few houses on each side, with several springs near it, the water of which is said not to be wholesome.

There are three principal anchorages in St. Helena Bay, all in the S. or S.W. part of it. The first is that of the Berg River, at 3 miles from its mouth, in 5½ fathoms, with its East point bearing E.S.E. ½ S., and Point St. Martin, N.W. by W. ¼ W. The second and best anchorage, is one mile off shore, near the meridian of the Resident's House, in 7 fathoms, Cape St. Martin bearing N.W. by W. ¼ W. The Resident's House is at the bottom of a small bay, 6 miles from Cape St. Martin, to the East of which is a high hill called *Partridge Hill*. The third anchorage is before *Stump Nauss Bay*, a small cove 3 miles from Cape St. Martin, in 9 fathoms.

The *Britannia Rock* is a danger first found by a ship of that name striking on it, and which was compelled to run ashore in Stump Nauss Bay. The position assigned to it was 13 miles *true* North of Cape St. Martin, but may not have been very exactly determined. Another rock is placed 4½ or 8 miles N.W. ½ W. from Point Paternoster, called the *Walton Rock*, and, lastly, on Captain Owen's chart, there is a rock marked at 14½ miles N.W. ¾ W. from Cape St. Martin. Whether these indications all refer to the same danger we cannot determine, but recommend the attention of navigators to them.

The *Berg River* passes through some of the richest districts of the Cape Colony, and on its banks are some of the best wine districts, particularly one called the Vale of Drakenstein, from which two-thirds of the wine brought to Cape Town is derived. Its water is peculiarly wholesome, and well adapted for shipping. The casks may be floated up with the flood about 5 miles, and then filled and floated back to the ship with very little trouble.

In summer, when southerly winds prevail, the anchorage here is safe; the Bay being open only to winds from between the North and West. It is equally unsafe during the winter, when north-westerly winds may be expected. It is high water here at 2^{h} 30′. The variation is about 28° West.

St. Helena Bay is, therefore, a very good harbour in the S.E. monsoon—its only recommendation, as nothing can be procured in the shape of provisions. The ruins of two or three houses are the only indications of human beings having once dwelt in this land of desolation; for not one speck of verdure relieves the eye in its trackless wanderings over the desert. At a short distance inland, within Cape Deseada, the country rises into abrupt craggy eminences and broken ranges of lofty hills.

---

* Near the mouth of the Zwartlintje River is *Hondeklip Bay*. A small village has been established here, where the cutters employed in carrying copper ore to the Cape take in their cargoes.

A broken and rugged coast extends for 7 leagues, nearly true *South*, between St. Helena Bay and *Saldanha Bay*, in which are several small coves, and some rocks, at a considerable distance from shore.

The first of these coves is *St. Martin's Bay*, to the West of the Cape, but which affords no shelter. A reef extends off it, and ships should not come into less than 34 or 35 fathoms to pass these breakers. Beyond this the coast forms three projecting rocky points, with as many slender bays between them, the last of which is called *Paternoster Bay*, at the bottom of which is a building called the Custom House. A road leads from it to the Berg River. The bay has only indifferent shelter for boats.

POINT PATERNOSTER is the West point of the last named bay, and also the N.E. limit of another bay, whose southern point is called *Castle Point*, which owes its name to the singularly formed hill which surmounts it. *Castle Bay*, as this is called, is 5 miles wide, has a sandy beach, but no shelter. A fisherman's house stands at the bottom of it. To the West of Castle Point is a group of islets surrounded by a line of breakers called the *Paternoster Rocks*. These breakers extend for 2 and 2½ miles from the shore.

Jacob's Bay is a slight indentation of the coast to the South of the latter. It is 4 miles wide, and its South point has a reef running off it for 1¼ miles. In the middle of the bay is a breaker which shows, lying S.W. by W. ½ W. 2½ miles from Castle Point. W.S.W. 5½ miles from the same point the charts show another reef called the *Duminy Rock;* this rock lies with Castle Point, and a bold projection called Witte Klip, bearing E. by S. *Brenton's Bay* is 5½ miles South of Jacob's Bay, the coast between being rocky. The bay is small, and very dangerous, from the heavy swell and baffling winds which prevail. *Baven Point*, surmounted by a sandhill, is 1¼ miles South of Brenton's Bay, and hence to Saldanha Bay, 3 miles distant, are numerous rocks and breakers, the chief of which are Bermudas and France Islets.

SALDANHA BAY.—The entrance of this fine harbour lies between 33° 3′ and 33° 6′ South. Its North point is in lon. 17° 48′ 30″. On its North side, at the entrance, is a little isle called *Malagassen*, and on its South side another called *Jutten*. Two miles and a quarter eastward of Malagassen is a similar isle, *Mascus*. These isles are too low to be discerned at a distance, and, in steering for the Bay, the latitude will be the best guide. The entrance is broad and clear; but Mascus may, if requisite, be passed on the northern side. It may be approached to half a cable's length.* The wide passage on the South is, however, to be preferred. A bay to the N.W. of Mascus is called *Bavian's Bay;* and another, more to the northward, *Houtjes Bay:* these are divided by a promontory, which terminates in sunken rocks. On this cape, *Point Houtjes*, a signal-staff was erected in 1845.

In the principal channel, between Jutten and Malagassen, the least depth is 13 fathoms, bottom of sand. Mascus, with the North and South points of the main land, are bold-to. Within 50 fathoms of the Island are 6 and 7 fathoms, clear ground; but within 50 yards are also 7 fathoms, and foul ground: the same from the Island to the North point of the main land, forming Houtjes Bay, off which, at about a cable's length, is a rock, not larger than a small boat, dry at low ebbs.

In Houtjes Bay, on the North side, there is good anchorage for the largest ships; and there is deep water on the West side of it, close to a natural pier of granite. Here ships may lie in perfect safety, in all seasons. Those in want of careening, or repair, are sent hither from the Cape.

Houtjes Bay has regular soundings at 5½ and 4 fathoms, sand and shells, with from 7 to 10 fathoms to the eastward. The best anchorage is in 6 fathoms, with the West end of Mascus and the southernmost extremity of the Bay in one; or a little farther in, in 5 fathoms, where you will be completely sheltered. It is here to be noticed, that, S.E. 3 miles from the point forming the Bay, is a sunken rock called the *Blinder-klip*, which is not visible even at a low ebb, when there is 3 feet of water over it, unless the wind blow strongly. The distance of this rock from the sandy beach of the main is more than a mile; the depths between, from 7 to 4 fathoms, sand and broken shells. The Blinderklip lies with the Mouse Back (a high piece of land on the northern shore) and Mascus Island in a line.

---

* See particular plan of the harbour.

At the bottom of the Bay are some sunken remains of the ships forming the Dutch fleet, which was surprised here by Sir George Keith's squadron, in 1795. In order to avoid them, do not come too near the *Kleine Wit* anchorage, where these sunken vessels chiefly lay, but anchor with Point Houtjes and the East end of Mascus Island in line, in 5 or 4½ fathoms.

At the entrance of the lagoon, on the South of Saldanha Bay, are two islands, Schaapen (*Sheep*) and Meeuwen (*Mew*): 2 miles within these, on the western shore, is the Government Residence, the channel to which cannot be attempted by verbal directions only. In working up to Schaapen, keep your lead going, as the soundings to the north-eastward are regular, and will be your best guide; but, in standing back to the S.W., bring the N.W. end of Schaapen Island in one with a saddle hill on the western side of the lagoon, and then put about, as the water shoalens quickly afterward.

Saldanha Bay is an excellent place for ships that require the repair of any damage caused by stress of weather at sea. Bullocks and sheep may be obtained from the farmers at a moderate price; and plenty of fish may be caught, either with the net or with hook and line. The inlet called *Riet Bay*, on the S.W. side, is the best place for the net and seine, it having only 6 or 7 feet of water, with sandy ground. To other places, being rocky, the hook and line only are adapted. The islands swarm with wild rabbits.

Saldanha Bay is one of the finest harbours in the world, but, from the want of water, has been little frequented. Sir John Barrow, impressed with its importance for naval purposes to England, proposed a canal to be cut from the Berg River, which falls into St. Helena Bay, to the N.E. corner of Saldanha Bay, and thus obtain a plentiful supply of excellent water. But the necessity of this has been removed by the discovery of a copious spring on Schaapen Island. The circumstances are as follows:[*]—On March 22nd, 1841, indications of a spring of fresh water were observed on Schaapen Island, a place of general resort, and situated at the head of the Bay. On tracing these up, it appeared that the fountain had evidently been discovered many years ago, but carefully concealed; and in working to its source it was found it had been purposely sealed by masonry with cement, and its course carried through a channel into the sea, 11 feet below low-water mark, evidently with the intention of hiding its existence. The supply from this spring, now released, is said to be most copious, and equal in purity to that of Cape Town, to which the Portuguese discoverers gave the significant and well-deserved name of Rio Dulce.

The re-discovery of this buried treasure seems to have excited a spirit of inquiry; and a short time afterwards, on the dam at the Residency being cleared out, two new springs were found, of good water, one of which discharges 10 gallons a minute, or 144,000 gallons in twenty-four hours. No doubt more water will be discovered; and this splendid harbour, consigned so long to uselessness, will take up its rank as a grand naval station, for which nature intended it.

The time of high water in Houtjes Bay is 2^{h}. The rise is from 6 to 7 feet.

DASSEN or CONEY ISLAND, in lat. 33° 26′, lies about 7 leagues to the southward from the entrance of Saldanha Bay, at a league from shore, and W.S.W. [*S.W.*] of a headland named *Eyserberg*. It is a low sandy island, the resort of innumerable penguins. The shore is foul on the West side, with breakers that run out half a league into the sea, but fair on the East side; and, on that side, in 16 fathoms, at about a gun-shot from shore, the bottom is of white sand, with good anchorage. Captain Horsburgh says: "When we tacked 4 miles from the West part of it, in 17 fathoms, sand, the sea broke over a sunken rock, distant 1½ miles from the S.W. end of the island. The South side is said to be rocky, but there is anchorage within it."[†]

---

[*] See *Nautical Magazine*, 1841, pp. 492, 626.

[†] The following extract from the log book of the ship *Mornington*, Captain Dunlop, 20th September, 1814, shows the necessity of caution in approaching Dassen Island during the night:—At 4^{h} p.m., fresh breezes and clear, in 37 fathoms; at sunset, the outer breakers of Dassen Island S.S.E. ¼ E.; body of the Island, S.E. ¾ S.; body of the Table Hill, Good Hope, S. ½ E. At 6^{h} 30′, tacked ship; at 9^{h}, sounded, ground at 42 fathoms; at 10^{h}, again sounded, *52 fathoms*; at 1^{h}, wore ship, standing in toward Dassen Island; at 11^{h} 30′ p.m., saw breakers *ahead, close* to the ship; tacked immediately in 30 fathoms, rocky ground, and had just

Dassen Island has latterly been thus described:—This isle lies about 6 miles from the main land; it is 1½ miles in length, and 1 broad; everywhere, excepting to the eastward, bounded by a reef, on which the sea breaks with much violence, especially over some rocks to the westward, where the surf can be seen from the opposite side of the Island, flying up in the air like the magnified spouting of a whale. Dassen is the property of an individual at the Cape, who derives a considerable revenue from eggs which the penguins and gulls deposit on its surface, and which are sold at Cape Town at a halfpenny each. The isle is formed of rugged masses of granite, with slabs of which the boors who collect the eggs erect their huts, glossing them over with a bright dark japan lustre, which, by the agency of fire, they obtain from the sea-weed. Fresh water is supplied from Cape Town, and guano has been found on the island.

ROBBEN or PENGUIN ISLAND lies at the distance of 8 leagues S. ¼ E. [*S.S.E. ¾ E.*] from Dassen Island, and 5 miles northward from the lighthouse on the South side of the entrance of Table Bay. It is rather higher than Dassen Island, and about 2 miles in length from North to South. The western and southern sides are surrounded with heavy breakers, and a sunken rock, called the *Whale*, lies at the distance of a mile from the southern point.[*] Ships may anchor off the eastern side of the island, in from 10 to 12 fathoms, at 1 or 1½ miles from shore, or within three-quarters of a mile from the island, in 9 or 7 fathoms, and sheltered from a S.W. swell by the island and reefs. A ship may thus lie until the wind comes to S.W. or West, which generally happens in the morning during the fair season; then weigh, and, if requisite, reach the anchorage in Table Bay. A vessel may also find good shelter from a N.W. wind under this island, when, on the contrary, she would be quite exposed in Table Bay.

It was reported, and the report went through the whole circle of newspapers, that Robben Island was sunk in an earthquake on the 7th of December, 1809; it, however, remains, with its old characteristics, a sandy soil, and a ridge of elevated land in the middle from North to South. On its eastern side there is now a small establishment for the whale fishery. Some grapes and culinary vegetables are raised on the isle, which has several springs of good water. Penguins and quails frequent and breed here. This isle has been used as a depôt for convicts from the Cape, who are, or were, employed in quarrying limestone, of which the base of the island is composed.

CAPE OF GOOD HOPE.—The southern promontory of Africa, commonly called the CAPE of GOOD HOPE, is a peninsula, nearly 10 leagues in length, composed of a vast mass of mountainous and rocky land, between the latitudes of 33° 53′ and 34° 22′ S. The North end of the promontory forms TABLE BAY, on the South coast of which stands CAPE TOWN, having near it, on the West, the *Lion's Mountain*; at 2 miles from it, to the South, the *Table Mountain*; eastward of which is the *Devil's Berg* and other elevations.

"Height of the Lion's Rump, westward of Cape Town, in yards, 382; Lion's Head, or Sugar Loaf, to the S.W., 720; West end of the Table Land, 1174; East end of the same, 1195; Highest point, or Peak, of the Devil's Berg, 1104; Shoulder of the same, 474. These are the perpendicular heights of all the most conspicuous parts of this magnificent pile of nature, at the foot of which, facing the Bay, stands Cape Town."—(*Grant's Voyage.*)

"The Cape peninsula may be said to be composed of two mountainous tracts, separated from each other, and from the main, by a narrow isthmus of low sandy plains.

---

gathered way on the larboard tack, when the ship *struck once violently forward*; kept away N.W. for a cable's length, and sounded in 32 fathoms, the breakers distant one-quarter of a mile.

It was concluded, from the heavy sea running at the time, that the false keel and fore-foot had received material damage, although the ship made no water. From the explicit directions previously laid down, no idea of danger was entertained; and, had not the night been very clear, the ship must evidently have been lost. At 2^h 30′ a.m., tacked ship in 50 fathoms; at 3^h, tacked in 25 fathoms; at 4^h 30′, tacked in 50; at daylight, the body of Dassen Island bore East; at 7^h a.m., sounded in 25 fathoms, the Island N.E.; at 9^h, 10^h 30′, and 12^h, tacked ship; at 8^h p.m., sounded in 27 fathoms; at 8^h 30′, in 30 fathoms; at 9^h, in 20 fathoms; at 10^h 30′, in 30; at 11^h 25′, in 20; at 11^h 30′, in 25; at 12^h, in 22. At noon moderate breezes and clear, Dassen Island N.W. ½ N. nearly 3 leagues, and the Table Hill S. ¾ W. about 9 leagues.

[*] See the particular plan of the Bays of Good Hope, or the separate Chart of Table Bay, &c.

"The northern tract is composed of the famed Table Mountain, that of Constantia, and several others of less note, and contains many very valuable estates, particularly those of *Constantia* and *Hout Bay*; while on the southern range, from Hout and Fish-hook Bays, southward, to the Cape Point, there is not one estate valuable for its productions, although the land is capable of great improvement in every point of view."—*Captain Owen*, Vol. I., p. 60.

The Land over Table Bay. (a) Table Mountain, (b) Lion's Rump, (c) Devil's Berg S.S.E. 12 leagues. Taken on board the Mary, by Captain J. W. Monteath, 19*th December*, 1818.

The Cape of Good Hope, on approaching either from the westward or the eastward, has the appearance of a large island, when you are at such a distance as not to be able to discern the connection between its mountains. Of all the land, the highest and most remarkable is the Table Mountain, which appears quite level, and falls down perpendicularly at both ends, till it joins the high lands near it: it may commonly be seen in the offing at the distance of 10 leagues, and in very clear weather may be discerned at 15 leagues. It has been already noticed, that the eastern part of the Table-land is connected with the high peaked hill called the Devil's Berg, and its western part with the Lion's Head, or Sugar-loaf, on the top of which a signal is hoisted when any ships are in sight.

Here it is to be noted, that an eddy current commonly sets from the northward into Table Bay, between Robben Island and the shore; while, at the same time, the regular current is setting around the Cape and to the north-westward. Vessels bound to Cape Town, therefore, make the land to the southward of the Bay: from want of this precaution some have driven as high to the northward as Dassen Island, a distance of 10 leagues.

CAPE TOWN, the capital of the colony, has straight and spacious streets, crossing each other at right angles, formed by handsome and genteel-looking houses, the roadway being constructed on the most improved plan of Mr. M'Adam. The town extends about 1½ miles along the shore of the bay, named, after the mountain, Table Bay. The houses are generally two stories in height, and are constructed with flat roofs, in consequence of the violent winds to which the place is subject. They are built of stone, their exterior being either whitewashed or neatly stuccoed; many of them have terraces, or, as they are termed, *stoeps*, before them. They are frequently shaded by a small row of fir-trees, which form an agreeable relief to their dazzling whiteness, and at the same time afford the advantage of a shady walk. The terrace walks in front of the houses are generally the favourite lounge of the family in the evening or during the heat of the day, and at all times they form an agreeable promenade. The rooms of the houses are large, lofty, and airy, but unprovided with any ceiling, the naked joists being seen, with the floor above them. This is a peculiarity which is to be found in the most respectable houses of Cape Town. The floors are generally varnished; very few rooms boast of fire places; and from the deficiencies of chimneys, the aspect of the town, although an English settlement, is very different from those of England—a feature which at once would stamp the place as foreign to an Englishman. He would not believe that it is an English town, until he found himself among its inhabitants. Its houses are, besides, deficient of gardens. The Heerengracht, or Gentleman's Walk, is the principal and fashionable street of Cape Town. The churches are few and obscure. The Castle, or Citadel, a pentagonal building at the S.E. of the town, is chiefly occupied by troops. The Governor's House is situated near the Public Gardens, and is an humble-looking, but perhaps comfortable, residence for his Excellency.

The *Observatory* is a large and elegant structure, situated between 3 and 4 miles East of Cape Town, on a flat sandy heath. The central part of the building is allotted to the instruments, and the two wings form the residences of the astronomer and his assistants. It was erected under the superintendence of the late Mr. Fallows, at an expense of £30,000.* It is in lat. 33° 56′ 3″ S., lon. 18° 28′ 45″ E., or 1^h 13′ 55″ East of Greenwich. In front of this is the time-ball apparatus, hereinafter described.

---

* *From Mr. Webster's "Narrative of the Voyage of the Chanticleer," Vol. I., p. 236.*

The municipality of Cape Town, according to the estimates of September and October, 1842, contained, in the twelve districts, a population of 21,840, living in 2,528 dwellings, in the proportion of 100 males to $105\frac{12}{18}$ females, nearly one-half of whom were Mahomedans. This is exclusive of the military and visitors. The town is well ordered by the new municipal regulations; it is also well watered, and is altogether in a state of improvement.

The country about Cape Town is indeed mostly barren and unprofitable, and it is by no means remarkable either for fine scenery or pleasant walks, hemmed in as it is on one side by the Table Mountain and the sea, and on the other by a wide expanse of dreary sands. Little or no agricultural produce is obtained from the neighbourhood of the town; it generally comes from a distance in the interior. The farms of the Cape are large and straggling; and though the agriculture is said to be bad, the Dutch farmers are averse to change, or to the introduction of what are considered modern improvements.

Mr. Webster says,—The vegetation of the Cape has been so much lauded, and its beauties have been represented as so far superior to that of other countries, that it would seem venturesome to dissent from the general opinion. For my part, I cannot see this superiority; on the contrary, instead of it I found a deficiency of trees, and a stunted vegetation in general. It is said that the Cape possesses 3,000 indigenous species, 400 of which are bulbous, and there are few useful purposes for which they are available: neither dyes nor drugs are to be obtained from them, excepting aloes; and even the wood for the wine casks is imported.

The principal production of the colony for exportation is wine, and of this there are eight varieties, of which Constantia is the best. It is the production of an estate, at the distance of an agreeable ride from Cape Town. About 33 pipes are made of it each year, and about 90,000 gallons of Cape Madeira are annually brought into the town. The next principal productions of the colony are wheat and wool, and these articles are on the increase both as to quantity and quality.

TABLE MOUNTAIN.—Mr. Webster's description of this well known place, and the phenomena that are met with there, is so concise and complete that we give it as follows:—*

Any one who has once seen the Table Mountain of the Cape of Good Hope cannot possibly forget it. From Table Bay it appears towering above the little town at its base in majestic grandeur.

There is a gradual and easy rise of about 500 feet from the town to the base of the Mountain, from whence it rises abruptly, like the side of a wall, to the height of 3,600 feet above the sea, and it appears, from the anchorage, to embrace the town in its curved-like shape. The summit is formed by a broad fillet surface. The height of the Mountain is frequently the subject of inquiry, but few ever think of its length, which is about 1½ miles. On the South it slopes off gradually towards Hout Bay. To the S.E. of the Table Mountain is a lofty peak called Devil's Berg, or Devil's Mountain.

On the opposite side, or to the N.W. of the Table Mountain, and separated from it, is the Lion's Head, from which a long sloping hill of less elevation runs off, called the Lion's Rump, or Signal Hill, on which is a signal-staff, which commands a view, in clear weather, of 60 miles around.

In nearly the middle of the Table Mountain there is an ascent formed by means of a cleft in the face of it, by which the good people of Cape Town visit the summit, and certainly by the shortest path, notwithstanding its frowning and forbidding aspect in that direction, which appears to defy at once all the scaling ladders in Europe. In fact, to perform this very feat, is the object of most of the pic-nic parties at the Cape. It is certainly rather fatiguing, but then there is more credit in performing it, for a little difficulty here and there is the best thing in the world in these expeditions. A small stream issues from the top of the Lion's Head over a slab of granite, and comes tumbling down the Mountain, turning a mill in its course, and by the side of it is the path. This is by no means the best that I have ever seen, and it is a matter of no little difficulty to keep it among the rugged rocks.

After quitting the town, the ascent to the mill-house is easy enough, but afterwards it becomes a different matter. The vegetation along the course of the stream is most luxuriant, and here and there are clusters of silver-trees, the *protea argentea*, presenting a beautiful prospect from the bay. The mill is the last house on the road, and not far above it is the second waterfall, over a brown sandstone rock; and soon after the ravine is entered, by which the ascent is made. It is narrow, the sides in some parts approaching pretty close to each other, and for the most part as vertical as a wall, affording, in their broken recesses, shelter for numerous large black monkeys. These fellows, as they sit perched on the ledges of the rocks, by their curious attitudes and grimaces seem inclined to dispute the passage of a visitant; and they are frequently in such formidable numbers, and so determined, that it would be impossible to pass them without the aid of some good stout cudgels.

---

* "Voyage of the Chanticleer," Vol. I., pp. 292, 321.

As soon as the summit is gained, the trouble of doing it is well repaid by the magnificent prospect around. The vast expanse of ocean, which here and there appears to mingle its waters with the clouds on the scarcely visible horizon; the distant mountains, the outlines of which are feebly pencilled on the ethereal blue of heaven; on one side, Cape Town, spread out at the foot of the Mount, like some child's toy of a village; and on the other, Simon's Town, much less from its greater distance; this, and more than can be described, fills the mind with awe and admiration. The top of the Mountain is flat, and towards the southern part of it is some little vegetation, besides bushes, which are extremely convenient for the purpose of making a fire; but in addition to these, there are stems of much larger trees than are found to be growing there. There is also abundance of water to be found on the summit.

The Table Mountain is composed of a sandstone of many colours, but chiefly of a white granular quartz, passing in some places into quartz rock. The Mountain rests on a granite base, which is passed at the waterfall a little above the mill, and at the elevation of 500 feet above the sea. There are vast blocks of granite in Kemp's Bay, on the West side of the Mountain; and it appears to lie N.W. and S.E., traversing the Kloof from the Lion's Head, appearing abundantly in Table Bay.

The principal annoyance, it appears, to which one is subject, in visiting the summit of the Table Mountain, is that of being overtaken there by a S.E. wind. This unwelcome breeze brings a chilly atmosphere from the cold regions of the South, and immediately produces a dense mist, which obscures the view. A party caught thus, if they are not very careful in making good their descent from the Mountain, very easily lose their road, and are soon bewildered; indeed, accidents are known to have happened from this very cause, by which persons, having lost their way coming down, by one false step have been precipitated from the Mountain and killed.

During the summer season at the Cape, the S.E. is the prevalent wind. It is, in fact, analogous, in some degree, to the trade wind and sea breezes of the tropics; but we must be careful to confine it to the southern and eastern coasts,—it then becomes a true sea breeze, or a rush of cool air upon the heated plains. But there is a remarkable circumstance connected with the S.E. wind at Cape Town, viz.—the dense mantle of vapour above mentioned, which rests upon Table Mountain, and rushes over its precipitous sides like a cataract of foam and vapour. This peculiar appearance is called by the inhabitants the *Table Cloth*, and by the French the *Perruque*.

When the S.E. wind, passing over the southern shores of the Cape, prevails sufficiently to surmount the Table Mountain, the first notice of the fact is a little mist floating as a cloud on a part of it about 10^h or 11^h in the forenoon. By noon, the Mountain becomes fringed with dew; and half an hour after, a general obscuration takes place by the mist. In another half-hour the little cleft between the Devil's Berg and the Table Mountain pours over the cloudy vapour; and at 2^h the Devil's Berg is capped by the clouds. The Table Cloth is now completely spread: the S.E. wind, the progress of which had been thus arrested, now forces its way onwards, and rushes down the Mountain into Table Bay with the utmost violence, producing loud and terrific noises in its course, and accompanied by a most curious exhibition; while the Table Mountain remains covered with the dense cloud, fragments of the vapour are torn from it by the force of the wind, and are hurried about the sides of the Mountain, assuming a variety of fantastic shapes, and playing about the precipice according to the direction of the different currents of wind. This phenomenon lasts till about 5^h in the afternoon, when a little clearing, which takes place on the western edge of the Mountain, announces that the Table Cloth is about to be folded up. By 6^h or 7^h the clearance has considerably advanced; and by 8^h or 9^h every vestige of it is gone, and nothing is to be seen about the Mountain, but an ethereal sky and the twinkling stars. Such is the curious phenomenon of the *Table*

Cloth at the Cape of Good Hope with the S.E. wind; and even while it lasts throughout the night, it will disappear in the same manner. When this is the case, in the early part of the morning a little white cloud may be seen suspended like a canopy over the Table Mountain; at 10ʰ a little vapour begins to curl and play about the Mountain; and precisely the same phenomenon takes place as before. We are here supposing that the S.E. wind blows for two or three days at a time. At other times, when it is only of short duration, and in a hot clear day, the first symptom of this breeze is the vapour resting in little parcels on the Mountain; and as these increase, so does the wind come on. But it is not till the Mountain is completely covered, that it forces its way with such violence down the precipice. By the evening, about 9ʰ the Table Cloth is gone, and with it the wind, and a beautiful calm and serene night ensues.

It is difficult to account satisfactorily for this phenomenon; similar effects are observable in other parts of the world, as at Gibraltar, Ascension, Madeira; but in a minor degree; the well-known *Table Cloth* is the most observable, and probably the most magnificent.

This violent S.E. wind is to be guarded against in entering Table Bay; for it is not unusual for vessels, during its continuance, before arriving at Green Point, to have light breezes; and upon opening the Bay to the S.E., and coming beyond the shelter of the Table Mountain and the Devil's Berg, to be obliged to let fly all sail to save their masts from the fierce South-easter sweeping over the land into the Bay; therefore, it is prudent to shorten sail in time to avoid accident, and the appearance of the Table as above described may perhaps give some indication of what may be expected.

TABLE BAY.—On GREEN POINT, the outer point of the Bay, 2 miles N.W. from the town, is a *Lighthouse*, which was established in 1825, and is obviously of the greatest utility.

On MOUILLE POINT, about 608 fathoms to the eastward of Green Point, is another lighthouse, showing a harbour light on the French system; these are described hereafter.

Much has been said and written on the comparative advantages of Table and Simon's Bays: they both have their advantages. One drawback to Table Bay is the occurrence of the S.E. gales, which however do not last long, and their effects may be avoided with prudence and care.

Table Bay is an excellent place for all kinds of refreshments; wood is scarce and dear, but there is plenty of good water. Sheep may be obtained at very moderate prices, with other provisions, vegetables, and fruits. The water is brought down in pipes to the head or wooden pier, where boats fill it with hoses leading from the pipes to their casks.* The air is here generally cool in the night, although the sandy soil is greatly heated by the sun during the day; and this causes land winds from Table Bay to come off in hot gusts in the evenings, when their course is over such ground.

The water of Table Bay exhibits a very different appearance, according to the quarter from which the wind blows. With a N.W. wind the water is dirty red and turbid, as if mingled with a small quantity of blood. After a S.E. wind, on the contrary, the water is so beautifully pellucid, that the anchor, by which a vessel is riding in 10 fathoms, may be distinctly seen from on board.—(*Mr. Webster.*)

Table Bay is also much exposed to the wind and sea from the North and N.W. during the winter season, when the wind prevails from those quarters, and sends a heavy swell into the Bay.

Boat hire at Cape Town is very expensive; the surf, however, is sometimes very dangerous, and therefore those who brave it have a right to demand a proportionate reward. Coolies, or public porters, are stationed in the market place, the charges for hire being regulated by the municipal authorities. The landing is at the jetty, which is close to the citadel; and there is a stone pier to the N.W., near the Amsterdam battery.

It is extremely dangerous to remain in Table Bay after the 10th or 15th of May, for the N.W. winds may then be expected to set in, and they blow so violently that no ship can possibly ride them out. The Dutch never suffered their ships to be there after that time. N.W. gales are experienced in every season, but they seldom blow home in the Bay from November to May; and several ships have been driven on shore by them, even in the month of April.

---

* It is stated that two vessels, with tanks, force-pumps, hose, &c., have been fitted up for conveying water to the shipping in Table Bay. The water is excellent; and in the flourishing days of the Dutch East India Company the men-of-war of that nation, which frequently put in here, were compelled to bring home a few pipes of it for the use of the royal family.—*Naut. Magazine*, 1849.

A **Time Ball** has been erected at the flagstaff, before the South front of the Observatory, for the purpose of daily (Sundays and Good Friday excepted) communicating to the ships in the harbour the instant of 1^h Cape mean time, which corresponds to $11^h\,46'\,5''$ Greenwich mean time.

As the rate of a chronometer obtained on shore rarely agrees with the true rate at sea (the motion of the ship and other causes producing the alteration), it becomes necessary to ascertain the sea rate after the chronometer has been placed on board in the berth it is to occupy during the voyage, and from which, on no account, should it be removed throughout that period.

The present contrivance furnishes a convenient method for obtaining this important object, without any calculation or difficulty. All that the observer has to do is to point the common ship spy glass to the signal ball a minute or two before 1^h, and to note the instant of the fall of the ball from the top of the staff, by chronometer; then $11^h\,46'\,5''$ subtracted from the time by chronometer gives the error of chronometer, or Greenwich mean time, which, compared with the error obtained at departure, will give the rate during the interval.*

An *additional time ball* has been established at the Lion's Rump signal station, as that attached to the Observatory is not visible from the whole of the Table Bay anchorage, owing to the intervention of buildings. As in the other case, the observer should note the time by his chronometer when the ball begins to fall; and by subtracting one second from that time he will have the moment of 1^h p.m. mean time at the Cape Observatory.

When the vessel continues a week or ten days in the harbour, it will be satisfactory to know the existing rate. If the rate should be trifling, perhaps less than the probable errors of observation, it will be right to diminish the latter, by dividing the observations into two or more groups, and to take the mean of each group for one observation; the differences of these means, divided by the intervals of days, will give a determination very close to the truth.

The following are the **Port Regulations**, as published by authority:—

Article 1.—On the arrival of merchant vessels in Table Bay, a proper berth will be pointed out to the masters thereof by the port captain, when he boards them; and no master of a merchant vessel shall shift his berth, without permission from the port captain, unless in cases of extreme urgency, when he shall report his having done so, as early as possible, at the Port Office.

2.—Should it be the intention of a master of a vessel to discharge or to receive on board any considerable quantity of merchandise, a berth will be pointed out to him, as close to the jetty or other landing place as the safety of the vessel and other circumstances will admit; and the master will then moor with two bower anchors, with an open hawse to the N.N.E.; taking especial care, in so mooring, not to overlay the anchor of any other ship, or in any way to give the vessel near him a foul berth. Ships and vessels touching in Table Bay for water and refreshments only, may ride at single anchor in the outer anchorage; but in this case it is particularly recommended to veer out 80 or 90 fathoms, if they ride by a chain cable, as the liability of starting or fouling the anchor or breaking the chain will thereby be greatly lessened; and if riding by a rope or coir cable, to run out a stream or good kedge to steady the ship; and in both cases the other bower anchor should be kept in perfect readiness to let go. When the vessel is properly moored with bower anchors, or well secured with a bower and stream anchor, and with good cables, buoys, and buoy ropes, the master will then take the exact place of the ship by the bearing of two land marks and the depth of water; and should any accident occur, by which the vessel may drift from this situation, or lose her anchors, a good bearing and depth of water must be taken at the time, and the same must be notified in writing to the port captain. It is particularly recommended that vessels be kept as snug as possible, to counteract the effect of periodical winds, which at times blow with considerable violence.

---

* According to a subsequent notice by Mr. Maclear, July 7th, 1852, it is shown that the probable error has been reduced from about two-tenths of a second of time to one-tenth part of a second in time; a degree of accuracy more than sufficient for the wants of the seaman, whose ordinary method of noting time admits of no such precision.

3.—The following general signals will only be shown when, from local experience and good barometers, a severe gale may be expected. It is strongly recommended that they be promptly observed when made from the Port Office; and any neglect in the observance of, or departure from, the foregoing instructions, will be reported to the agents for Lloyd's and to the consignees.

Union Jack over white, pierced, blue.—Veer to a whole cable.

Union Jack over blue, white, blue, horizontal.—Strike lower yards and topmasts, and rig in jib-booms.

Ships or vessels having MARRYAT'S Code of Signals can make their wishes known to their agents in blowing weather through the Port Office; and any assistance required will be strictly attended to, as far as practicable; and vessels not having the code can make the following with their ensigns:—

1st.—Ensign in the fore-top-mast rigging.—I am in want of a cable.

2nd.—Ensign in the main-top-mast rigging.—I am in want of an anchor.

3rd.—Ensign in the fore-rigging.—I have parted a bower cable.

4th.—Ensign in the main rigging.—I want an anchor and cable.

5th.—Whift where best seen.—Send off a boat.

In order to notify to the public as promptly as possible the occurrence of casualties on the coast near Cape Town, by shipwreck or otherwise, it is directed that, whenever a vessel is known to be in need of assistance, three guns will be fired from the Chavonne battery, at an interval of two minutes between each, to be taken up and answered by one gun fired from the Imhoff battery.

DIRECTIONS.—ROBBEN or PENGUIN ISLAND has already been described (page 527). This island should not be approached nearer than 2 miles, as the Whale Rock lies nearly a mile to the southward of it.

Between the foot of the Lion's Head, or Sugar-loaf, and Green Point, numerous rocks, visible above water, lie at some distance from shore, and there is no hidden danger. Give these rocks a reasonable berth as you run in, and you will shoalen your water gradually from 34 to 36, 26, 20, 16, and 12 fathoms, rocky bottom, so that there is no anchorage there. You may borrow upon Green Point to 10, 9, and 8 fathoms, without danger: then steer up the bay, and you will have 8, 7, or 6 fathoms, regular soundings, but rocky, till you get about a mile to the eastward of Green Point, when the bottom becomes sandy, and fit for anchorage.

Should it happen that, when abreast of Green Point, you suddenly meet with furious breezes from S.E. or E.S.E., blowing so hard out of the bay that your ship cannot turn to windward, which is frequently the case, then you must bear away for Robben Island, taking care not to go within half a league of its South side.* A ship may anchor off the North end of the island in 9 or 10 fathoms; but it is to be observed that from the N.W. end a reef stretches out to some distance.

Should a South-easter blow so strong that a ship cannot bring up under Robben Island, and be driven to sea, she should haul round as soon as possible, and make short tacks to the southward of Green Point, under the lee of the high land, until the violence of the wind is abated.

The West side of Table Bay is clear ground all over, but the East and N.E. part is all foul. You may anchor in Table Bay, opposite the town, in 7, 6, or 5 fathoms, good holding ground. The best berth in the Bay is the house on Robben Island bearing, by compass, N. ½ W., Green Point N.W. ½ N., the flagstaff on the Lion's Rump W. ¼ S., and the Lion's Head S. ¾ W., in 5 fathoms of water, distant from the town 1 mile, and from the nearest shore half a mile. You have another good berth in 6½ fathoms, about 1½ or 2 cables' length farther to the eastward; but your berth will be pointed out by the Port Captain.—(*See Port Regulations.*)

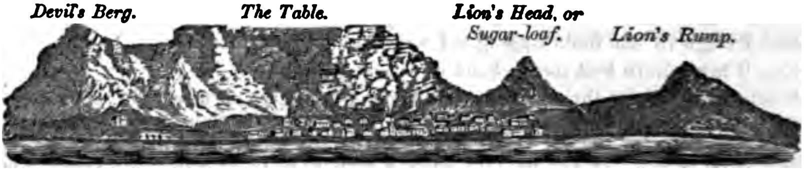
---

* Captain Horsburgh says that the South-easter comes from the land with great fury; it is therefore prudent to take in a reef or two in the topsails, before a ship has reached Green Point, if near or a little past noon. "By neglecting this precaution I have seen ships rounding the point with all sail set in a light breeze; then suddenly meet the fiery South-easter on opening the bay, which compelled them to let fly everything to save their masts; and one of these ships, whilst the people were aloft securing the topsails, nearly ran on shore on the East side of the bay in veering.

At a time when N.W. winds are expected, it is not prudent to anchor in less than 6 or 6½ fathoms: as here the swell runs more regularly than in shoaler water. In this season ships should ride with a whole cable or more; for they may drive, if the anchors be not well seated in the sand; and, if driving, it is difficult to bring a ship up, as the anchors scrape the surface of the ground, while a heavy sea operates on the ship.

On the 4th of July, 1830, the *Alfred*, from London, parted from her chain cables, was stranded near the Hospital Lines, surveyed and condemned; in consequence of which the Port Captain wrote as follows:—

" From the experience of five winters, I am of opinion that chain cables do not answer in this bay in northerly gales: and unless a vessel have a good hemp or coir cable on board during the winter months, viz., May, June, July, and August, when such gales are prevalent, accidents must occur. In some vessels the chain cables are evidently defective, either from corrosion, or from being too small for the purpose." *


Devil's Berg.
The Table.
Lion's Head, or Sugar-loaf.
Lion's Rump.

Appearance of the Land from Table Bay.

The following directions for the Bay, &c., are by Captain Wm. FitzWm. Owen, R.N., the respected surveyor of the African coast:—

First.—*In order to enter Table Bay from the northward*, and meaning to pass outside Robben Island, a ship should keep the Light to the eastward of S. 9° E. (by compass), or about S. by E., until she gets soundings, under 20 fathoms, at a little more than a mile from the lighthouse: she may then steer E.S.E. or E. by S., observing not to come under 10 or 12 fathoms, until the Light bears W.S.W.—(See additional instructions below.) She may then steer for the anchorage, and may anchor in from 7 to 6 fathoms, so soon as the Lights are shutting in behind the Lion's Tail. This track leads about a mile clear of danger on Green Point; but a ship need not approach it so near, if she have, by seeing Robben Island, ascertained by its bearings that she is clear of the Whale Rocks, in which case she may round the coast at a greater distance from Green Point, if desirable; but the soundings in that case will not alone be a sure guide.

---

* *Captain Owen's Remarks on Chain and Hempen Cables.*—When Captain Owen, on his expedition, was in Table Bay, he remarked upon the comparative merits of chain cables and hempen cables, that chain cables are to be preferred for anchoring in every situation where the bottom is either foul or rocky, and in all places where anchorage is usually sought. But, under any circumstances, where the ship is exposed to the ocean's swell and heavy winds from seaward, hempen cables are decidedly preferable, for then a vessel's only security is to veer 3 or 4 cables end on end; and these, by their length, lightness (being nearly of the same specific gravity as water), and elasticity, enable her to rise over the sea with buoyancy; whereas, if riding by a chain, it is of no benefit to veer a long range of cable, as the chain will lie upon the ground; and, not being elastic, but of great weight, it will operate against the rise of the vessel with the swelling wave, and she will be subject to the most sudden and violent shocks from the strokes of the sea, which either breaks over her, or causes her to plunge through the waves, instead of riding over them. No ship liable to be so exposed should, therefore, be without two hempen cables, or, what is far better, coir, which is so much lighter than hemp that it floats upon the water. It is also strongly recommended to all vessels to use some few links of chain near the anchor. In the *Leven* a method was adopted for splicing chain and hempen cables together; the advantages derived from which are obvious, especially where the bottom is rocky, as the links of chain may lie over any sharp or projecting fragment without danger of being cut in two by the friction. By this combination the cable, if well spliced, loses none of its strength; while, by the suspended, but not excessive weight at the end, it obtains a greater degree of pliability, which makes the ship ride with more ease and safety.

" Many of the numerous shipwrecks in Table Bay may be attributed to the indiscriminate use of chain cables; their nature and management being ill understood: and several examples are on record where vessels have been obliged (even in the midst of a gale of wind) to slip their chains, and let go an anchor with hempen cables; the necessity for doing so being pointed out by the danger of their situation."—*Owen*, Vol. II., pp. 378-9.

For an account of the wrecks of the Atlantic, Urania, and Cape Breton, 29th Nov., 1835, *see the Nautical Magazine*, Oct. 1836, p. 628.

SECONDLY.—*In approaching from the S.W.*, a ship should not advance into less than 40 fathoms before the Light bears S.E. or E.S.E.; nor into less than 20 fathoms before it bears S. by E.; when the preceding directions may be followed.

THIRDLY.—*In coming from the northward*, and entering within Robben Island, the Light should be kept about S.W. by S. until the ship has passed that island. In passing the Island she may have some casts of from 8 to 6 fathoms; and when, on the given course, the water deepens from 11 to 12 fathoms, she may steer for the anchorage by chart, and as above directed.

In beating round Green Point, a ship should never shoalen her water under 11 or 12 fathoms, until she has brought the Light to bear W.S.W. as already stated.

In beating between Robben Island and the main, in order to enter Table Bay, the soundings may be taken from the Island, as it shoalens very regularly. In standing towards the main, it appears prudent to tack at the first cast of the lead after the water shoalens.

In these directions it is taken for granted that a ship will always keep her lead going, or so far as is requisite for safety.

There are two Lights on the Lighthouse on Green Point, which are in one when bearing about S.W. by W. The lower light appears to be of no other use than to assure the navigator which is the Lighthouse, should he see other lights. Captain Owen says, "We have seen the lights clearly from the deck, at 16 miles distance; but they will not make clearly as two Lights, until within 6 or 7 miles to the westward of them; and, from the northward, one Light only will be seen."

From the 1st of July, 1842, another Light has been exhibited on Mouille Point, about 608 fathoms to the eastward of Green Point. This is a lenticular Light of the fourth class, at the height of 40 feet above the level of high water; and the following instructions have been given, in addition to those of Captain Owen.

In standing in from the S.W., a ship should not pass the Lights on Green Point nearer than a mile, nor should the course inward be altered from eastward to the southward, with the intention of steering for the anchorage; nor should the ship be brought into less than 14 or 15 fathoms of water, before the Lights on Green Point (then in one) bear S.W. by W. ½ W., when the Light on Mouille Point will instantly be seen, and not before, bearing nearly S. by W. A ship may then alter the course from eastward, and steer S.S.E. for the centre of the anchorage, and anchor whenever the Lights on Green Point are shut in by sandhills near the Mouille, and the Light on Mouille Point bears N.W. distant about a mile, in from 6 to 8 fathoms of water. Vessels of light draught may steer S. by E. ½ E. for the anchorage, and anchor with the Mouille Light bearing N.W. by N., in from 4 to 5 fathoms of water.

The ship's distance from the shore, when the Light on the Mouille Point appears, may be readily ascertained by the bearings of the two Lighthouses, and the distance between them, as given above.

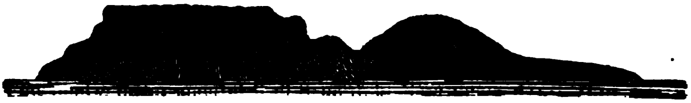
On coming in from the northward (inside Robben Island), the Lights on Green Point will appear in one, or nearly so, and the light on Mouille Point will also be seen, the distance between the lighthouses being as above mentioned; and the foregoing directions will be a sufficient guide to the anchorage.

It is earnestly recommended to strangers not to attempt to beat into Table Bay at night, in squally or thick weather. The strictest attention should be paid to the soundings, and the leads kept constantly going. The plan of the Bay should also be at hand for reference.—*Cape Town*, 1st March, 1842. (J. BANCE, Port Captain.)

The new moon makes high water at the Cape at 2^{h} 30′ or 2^{h} 45′ p.m.; and the water in the Bay seldom rises more than 5 feet, unless after a hurricane, or by some extraordinary cause. *Variation*, at a mean, 28° W.—1825.

By late observations in Table and Simon's Bays, it has been found that the mean interval between the moon's meridian passage and high water is 2^{h} 42′. Therefore the approximate time of high water on any given day is 2ʰ and 42′ after the moon's passage; and it may be found by adding this time to the hour of the "Moon North," as given in any Cape Ephemeris.

Captain James Steuart, in the brig *Leda*, passed the Cape on the 22nd of April, 18[illegible]. A S.E. wind had closed, and the morning was particularly fine, which induced him, at daylight, to make a sketch of the land, from which the annexed figure has been reduced.



The Table Land, bearing N.E. ¾ E. [*N.N.E.*] *distant* 15 *leagues.*

We shall conclude this description of Table Bay with the following excellent remarks by a correspondent (*Mexicano*) to the *Nautical Magazine.** "Bound to the Cape of Good Hope, or wishing to pass round it to the Indian Ocean, no particular directions seem to be required. It is only necessary to make something, as quickly as possible, in order to get into the westerly winds, which will be found to prevail from 30° southward. A strong northerly current will frequently be experienced in crossing towards the Cape. On the present occasion I found it particularly strong, and on nearing the land when bound to Table Bay, it requires to be attended to, as it runs almost constantly to the northward, or a vessel will have difficulty, and lose time in gaining the Bay. For recognising the land in the neighbourhood of Table Bay, no other remarks seem necessary than those given in the Book of Directions, the land being very remarkable. The directions by Captain Owen for entering the Bay are also very plain, pertinent, and easily understood: it is very surprising, however, that so many valuable vessels have been lost on entering this Bay; many during the night, but others during the day, and under favourable circumstances. A great many commanders of vessels, on nearing the high land during the day, and fancying themselves near the port, run on, and enter, or attempt to enter, during the night, thinking it an easy matter, from the presence of the Light on Green Point, the width of the entrance, and the apparent simplicity of the directions. I certainly think, however, that when a man is entrusted with valuable lives, particularly in passenger or emigrant ships, when the decks are crowded, and all, eager in the anticipation of landing, are bustling about, insensibly interrupting the necessary duties of the vessel, and abstracting the commander's attention from the great care requisite for the general safety, that 'discretion is the better part of valour;' and would seriously recommend every one, not quite sure of being in with the daylight, to haul off and enter in the morning. I know from experience that it is very difficult to judge correctly of a vessel's distance from the entrance: the land immediately contiguous being very high, and appearing much nearer than it is, renders it not only very difficult to judge correctly, but here is generally a haze over the low land. I have also invariably found, that when a lighthouse is situated immediately in front of and underneath high land, it adds very much to the difficulty of judging correctly of its distance at night. Besides, although it appears easy to keep the light on a certain bearing, and run into 18 fathoms, then haul into the Bay, &c., according to certain directions, it is not so easy in a short-handed merchantman, going 4 or 5 knots, to get soundings in 18 fathoms with sufficient facility. It is useless, however, arguing such a point: I strongly recommend every one to wait for daylight: a few hours are of little importance, and they can be easily made by a strict attention to despatch, when once fairly at anchor.

"Table Bay, as a place of discharge, and even as a place of call for refreshments, has obtained a very bad reputation. Many owners have put a positive veto upon their vessels going there. I think, however, its bad character is overrated, and an unnecessary degree of fear entertained with regard to the safety of vessels riding in the roadstead. I write advisedly, when I affirm that three-fourths of the wrecks which have taken place on entering this Bay have arisen from running unnecessary risks, or from the carelessness and ignorance of the parties in command. Neither would a vessel properly moored on arrival with good ground tackle, and a good scope of cable, before the violence of the gale sets in, be so liable to drive or part her cables. A sufficient degree of care and attention is seldom paid to seeing anchors laid down clear and in a proper position. In most cases, as soon as one anchor has gone (that very likely foul, from the vessel's having headway, and overlaying it with the cables,) the master goes on shore, where he remains —never thinking of mooring, in all probability, till a gale commences. It is also quite common for vessels calling for a temporary purpose to get huddled together in such a manner as to prevent their paying out cable when it commences blowing. The same circumstance occurred during my present stay in the Bay. The consequence was, as soon as the gale commenced, four or five vessels were all driving together; and, had the gale been of ordinary violence, they must have gone on shore, and added to the unjust degree of dread with which this anchorage is viewed at the present time. All vessels bound eastward or to the Australian colonies, with passengers or emigrants, and intending to call at some intermediate port for supplies, should, in my opinion, give a decided preference to Table Bay over any harbour on the Brazil coast. Supplies in the Cape are of superior quality and moderate price, whereas in the Brazils they are very inferior and expensive; neither in general cases would there be so much detention caused to the vessel by calling at the Cape, as on the Brazil coast."

---

* *Nautical Magazine*, 1842, pp. 806—808.

TABLE BAY to the Cape Point.—The distance between the lighthouse on Green Point and the southern extremity of the Cape, taken along-shore, is 11 leagues. The form of the land between is altogether variegated and irregular, and will be best understood by reference to the Particular Chart of the Bays and Cape. The first bay is one-third of a mile South of Green Point: it is called *Three Anchor Bay*, and is about one-eighth of a mile wide. It will shelter boats against S.E. or S.W. winds. At 10 miles S.W. by W. [*S.S.W. ½ W.*] from Green Point Lighthouse is a remarkable projection of rocks, extending from shore, near a promontory called *Chapman's Head;* and there are two clusters of rocks, called the *Lion's Paw*, at half a mile from shore, off the Sugar Loaf or Lion's Head, 3 miles to the southward of the Lighthouse. Besides these, are rocks along-shore, which is generally foul.

HOUT BAY.—A snug little cove, called *Hout Bay*, lies to the eastward of Chapman's Head, at 3½ leagues to the southward of Table Bay. It has been surveyed by the officers of H.M. ship *Leven*, according to whom it lies in lat. 34° 3¼′ S. The entrance, which is open to the S.W., is 1¼ miles broad, with soundings of 19 to 12 fathoms. The upper part, to the North, is only three-quarters of a mile in extent, and has 5½, 5, 4, and 3 fathoms, fine sand; and here shelter may occasionally be found. The Dutch, formerly, sent ships to winter here. The coast on each side is high and rugged, particularly on the East, which is an inaccessible, steep, rocky shore. The North shore is low, marshy, and divided by a stream of fresh water. The best way in is along the eastern shore: having passed through the middle of the entrance, luff up under the West point, and there anchor. On this point, now called *York Point*, is a battery. On the opposite side is a battery and blockhouse. The summit of a remarkable peak, *Constantia Berg*, seen over high cliffs, and bearing E. ½ S. [*E.N.E.*], leads directly to the Bay. Constantia Berg is about 3,200 feet in height above the level of the sea.

Hout Bay has been recommended as the coaling station of the steam vessels passing round the Cape. This has been done from the exposed character of Table Bay, with which, as an anchorage, Hout Bay contrasts very favourably. The finest garden ground in the neighbourhood of Cape Town is in the valley which runs down to the head of the bay, and a stream, the Hout River, flows through it. A tolerable carriage road is carried from the farm to Wynberg.

It is to be remarked, that at 2 miles westward of the Bay is a rock above water, called the *Vulcan*.

This rock would be very dangerous if it were not visible. It lies on the meridian of Chapman Head, and three-quarters of a mile from the nearest shore. Constantia Berg in one with the southernmost point of the peninsula of Hout Bay leads close to the southward of the rock; keeping Constantia Berg on the bearing of E. ½ S. leads a mile to the South of it.—(Captain *Rous*, R.N.)

Within it is a bank of breakers, with an islet and reef, *Duykers Isle* and *Shoal*.

Slang Kop Point, or *Snake's Head*, is a headland 5 miles to the southward of Hout Bay. The coast between forms *Chapman's Bay*, entirely bordered by rocks.

The Southernmost Extremity of the Cape of Good Hope is a precipitous cliff, with a peak, the summit of which is about 1,000 feet in height. At a mile eastward of it is a small rock above water, about a cable's length from shore, and named Diaz Rock.

From the Cape a reef extends to sea nearly a mile westward, and all the coast between it and *Snake's Head* is bordered with rocks. The Cape Point is given by Captain Owen in lat. 34° 22′ S., lon. 18° 24½ E.—(See Table of Positions.)

The Bellows, a large rock, even with the water's edge, lies with the South pitch of the Cape bearing North [*N.N.W.* ½ *W.*] 2 miles, and the Cape Point N.E. ¾ N. [*N.* ¼ *E.*] at nearly the same distance. From the rock, which always breaks, Muisen-berg, in the N.W. corner of False Bay, is shut in with the Cape Point; and Hang Klip, or the Peak of Cape False, bears nearly true *East.*[*]

Another rock, the **Anvil**, of 10 feet water, lies with the Cape Point bearing N.N.W. [*N.W.* ½ *W.*] 1½ miles, and the Bellows Rock W. ¾ S. [*S.W.* ¾ *W.*] 2 miles. This rock lies with the Devil's Peak (Table Bay) just open with Muisen-berg, and Pouls-berg South Hill nearly North, 2½ leagues.[†]

There is a passage between the Bellows and Anvil, with 10 fathoms in the shoalest part; but it is much safer to pass at a distance to the southward, than to incur risk in a narrow channel, where the ground is foul, and the current rapid.

FALSE BAY.—**False Bay**, as shown by the Chart, is formed by the peninsula of Good Hope on one side, and the land above False Cape on the other. The distance between is 16½ miles. False Cape has a steep bluff, resembling a quoin, which may be seen 8 leagues off. Without the line of the two capes is the rocky bank, called *Whittle Bank*, on which the soundings vary from 12 to 35 fathoms; it is about 2 miles over, and the shoalest water is with the Cape Point N.W. ½ N., and the peak of Cape Hang Klip (False Cape Peak) E.S.E. Within this bank the depths are 40 and 45 fathoms; without it, 40 to 50 fathoms.

In the middle and eastern part of False Bay the ground is generally foul, and unfit for anchorage. On the western side, at 4 miles from shore, is the **Trident Rock**, having only 12 feet over it.

The **Trident** is not a single rock, as it is in general supposed, but an extensive ledge of rocks, nearly a mile in circumference, covered with from 5½ to 15 fathoms of water. It is steepest on the S.E. side. Another rock, of 4½ fathoms, lies South (by compass), 40 fathoms, from the shoalest part of the Trident, with 11½ and 11 fathoms between. On the shoalest part of the Trident, the extent of which appears to be about 6 feet in diameter, from 12 to 15 feet of water were found at low spring tides. The ebb tide sets strongly to the S.S.W., and the flood to the S.E. over the ledge.[‡]

At 80 yards South of the Trident is the *Whittle Rock*, on which is 4½ fathoms water. To the N.W., at 220 yards distance, are other rocks covered to the depth of 4 and 5 fathoms. Between the Trident and the Whittle Rock the depths are 11 and 11½ fathoms. Upon these dangers the ebb tide, which is very strong, sets S. by E. and the flood E.S.E.

For the purpose of marking the exact position of the Trident Rock, two beacons have been erected at the back of Buffel's Bay, on the slope of what M. Kerhallet calls Paul's Berg, not shown on Captain Owen's chart. The upper one is placed on the summit of the coast, is painted black, and can be seen as soon as the Cape is rounded. The lower beacon is painted white, on the slope of the hill, about a quarter of a mile N.N.E. of the landing place in Buffel's Bay. These beacons each consist of a spar carrying a flat board at their summits, about 22 and 26 feet high. They are in one when bearing W. ¾ S., by compass, and are 1,700 yards apart.

There are also two other marks near to and beyond the arsenal in Simon's Bay. The top of a hill, bearing N.W. ¼ N. of the arsenal, has been whitewashed, and a large rock, lying behind the commandant's house, has also been whitened. These last bear when in one N.W. ½ N., and the junction of this bearing and that of the two beacons above named mark the summit most dangerous on the Trident Bank. By keeping these marks a point open of each other, either way, you will avoid the rocks.

---

[*] *Muisen-berg* (Mouse mountain) is a mountain near the shore of False Bay, 3 leagues to the southward of the Table Mountain: it is about 2,000 feet in height.

[†] It has been asserted, and probably with truth, that there are other rocks near the Anvil. But the Anvil appears to be the rock on which the *Colebrook* was lost, in the year 1778. At a short distance without it the depth is 30 fathoms.

[‡] A beacon placed to the N.N.E. of the Trident, in 1811, was carried away by the violence of the sea during a gale, in June, 1812.

On March 31st, 1854, *a beacon buoy* was placed at the distance of 40 fathoms E. by N. of the shoalest point (11 feet) of the Whittle Rock. The buoy is made of iron, painted red, carries a staff 13 feet long, with a basket, which is visible to the distance of 2 miles, and is moored in 10 fathoms water, with the upper or black beacon in Buffel's Bay, a little open to the southward of the white beacon, bearing about W. ¾ S., and the whitewashed mark, seen over Red Hill, a little open to the northward of the lower beacon bearing about N.W. ¾ N. There are several rocky heads, carrying from 4 to 6 fathoms, within the circuit of 40 fathoms from the Whittle Rock.

The following directions were drawn up by Mr. R. W. Gunthorp, Master of H.M.S. *Lion*, the Admiral's flag-ship, 1812; that is, before the beacon marks and buoys above named were established; but as they may be useful, we here repeat them.

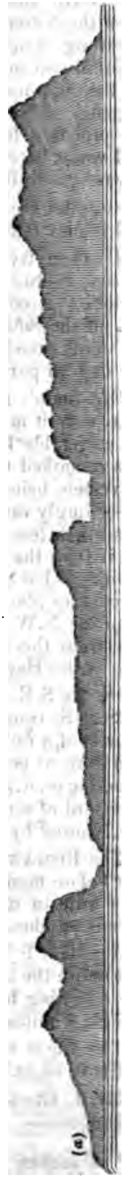
This dangerous shoal [the *Trident*] lies 4¾ miles *W. 21¾° S. true*, from two white rocks off White Rock Point, and nearly in the way of ships coming round Cape Hang Klip and bound to Simon's Bay; particular care is therefore necessary in order to avoid them. On the rock I had 13 feet; but I believe that, at low spring tides, there is much less. It appears about the size of a boat, bottom upward, from the leads frequently dropping off into 7 fathoms. In ascertaining its position from the buoy, we were obliged to keep the deep sea lead on one side and the boat on the other. The bank of uneven soundings extends nearly a mile in diameter, varying from 4½ to 21 fathoms, rocky bottom; therefore if, from the darkness of the night, or any other cause, a ship should be driven too near the Trident, by keeping the lead constantly going, you may know when you near it; and by hauling in or off the western shore, and increasing the depth to 21 or 22 fathoms, will carry you within the circle which encompasses the bank.

The marks for clearing the shoal are very remarkable in clear weather. The long mark is, North-hook Peak, a high peaked hill over Fish-hook Bay, just open to the right of Elsey Bay Peak; thwart mark, the third notch, counting to the right (on a hill situated beyond Little Smidt's Winkel Bay), on with the shoulders of the high land nearest the sea, and joining on with Simon's Bay; therefore, by keeping the three notches well open, until the peak of Elsey Bay and hill beyond seem in one, or the hill farthest off rather open to the left, will carry you between the North point of Little Smidt's Winkel Bay and the Trident, in from 27 to 22 fathoms.

It would be advisable for strangers coming into Simon's Bay, after passing the Cape, to steer directly in for Paulus Berg, keeping up the western shore at any convenient distance, until they open the sand-hills in Simon's Bay. The highest sand-hill appears like a road over the mountain. Just opening Block House Point, is likewise a good mark for clearing the Trident, and for running into the Bay. The Roman Rock may be passed on either side.

A ship from the southward, on approaching False Bay, will descry the ridge of rugged mountains that terminate in Table Bay. In clear weather, the Table Mountain may be distinguished at the distance of 20 leagues. On the eastern side of False Bay, from the pitch of Cape False, northward, another ridge of mountains extends to the bottom of the Bay, and thence to the north-eastward. The interval between the high lands on the two sides of the Bay is low and level; and some mountains, which may be seen over it, are at a great distance up the country. The False Cape, on the eastern side, so much resembles a gun-quoin, that it cannot be mistaken.

On coming into the Bay from the westward, with a N.W. wind, a ship may pass to the southward and eastward of the Bellows and Anvil, at the distance of 2 miles, or according to circumstances. From abreast of the Bellows, at 2 or 3 miles, haul up no higher than E.S.E. or E. by S., until you have run 5 or 6 miles in this direction, whence you may



Appearance of the Cape of Good Hope, (a) Cape Point N. by W. ½ W. distant 10 leagues.

steer to the E.N.E. and N.E. till the Cape bears W.N.W., and you will be clear of the sunken rocks. In advancing thus, you may always gain a proper anchoring ground, in case of a calm, or an unforeseen shifting of the wind.

SIMON'S BAY.—Eleven miles to the northward of the Cape Point, within False Bay, and at the foot of the highest mountain on the coast, lies SIMON'S BAY, into which you may put, in that season when Table Bay is unsafe, that is to say, in the months of May, June, July, and August, or when other circumstances render it necessary. Though this place is not more than a large cove, sheltered only from the winds between the North and S.E. coming by the West, yet those of the other quarters, which come from the bottom of the Bay, or from the mountains bordering the coast, never blow there so strong as to endanger the shipping; so that it may be looked upon as a safe retreat, wherein you may lie sheltered from all winds; besides, at Simon's Bay, you meet with all the supplies which a vessel may need after a long run, or in case of damage in her rigging. Here are magazines of marine stores; and victualling, with other necessaries, are procured from the Cape Town, which is not above 6 leagues off. You may wood and water here as readily as in any port of Europe; and even, in case of necessity, heave down by a hulk.

Supplies are procured from Cape Town, the road from which has been much improved, and is now tolerable for the waggons, and the transit of goods.

The country being mountainous, little or nothing is produced here, and there are few houses, exclusive of the public buildings; these compose the arsenal, and one of them has a clock. A commodious harbour might be formed by building a pier on the reef, which lies off the South battery. This pier, and another in Gordon's Bay, on the opposite side, for small vessels, would probably be the means of creating a market for the produce of the eastern part of the colony, more convenient than that at Cape Town.

Of Simon's Bay Captain Flinders has said, "I found it to be a prevailing sentiment, that, were it not for the advantages of Cape Town, Simon's Bay would, in every respect, be preferable for the Royal dockyard, and the equipment of Her Majesty's ships. It was remarked to me by an officer of discernment, Captain of the flag ship, that instances of vessels being driven from their anchors, by winds blowing into Simon's Bay, were exceedingly rare. He had observed that the strain upon the cables, with these winds, was much less than with those of equal strength, blowing off the land; and he accounted for it from the water thrown into the Bay, by sea winds, rebounding from the shore, and forming what is called an *undertow*, which tended to keep a ship up to her anchors. This takes place in Simon's Bay, with the S.E. winds, but not in Table Bay, with those from the N.W., which blow into it; owing, in part, to the distance at which ships there ride from the land; and apparently, also, from the undertow passing out on the eastern side of the Bay, clear of the anchoring ground."

On the S.E. point of Simon's Bay stands a fort with a white tower, and $\frac{1}{10}$ of a mile E. by S. ½ S. from this is a rock, carrying only 8 feet water, called the *Nimrod*. It is a quarter of a mile from the nearest shore, and 1½ cables' length from a flat rock in the form of a barn or pontoon, called *Noah's Ark*. (It has been stated that a lighthouse is constructing on it.) To the westward of Noah's Ark is a chain of rocks, at the end of which, one-third of a mile from Noah's Ark, is a buoy called the *Phœnix Buoy*. You will avoid the Nimrod by keeping to the North of the line between this buoy and the Noah's Ark.

The ROMAN ROCK lies E. by N., rather more than a mile from the white tower on the fort before mentioned. The rocky flat, on which the small reef shows, is about one-third of a mile in diameter. Besides that portion which is awash, thete are two other dangerous patches with 20 and 15 feet water respectively.

A LIGHT VESSEL painted red, and carrying a revolving light at an elevation of 37 feet above the level of the sea, has been moored near the Roman Rock in 7½ fathoms with the following bearings:—The Roman Rock, South, a cable's length;* the Whittle Rock, S.S.E., 7 miles; Seal Island, E. ½ S., 6¼ miles; Miller Point, S. ¾ W., 3¾ miles.

The Light Vessel will, during the day, show a red flag (or perhaps a ball), whenever a sail is in sight.

Mr. I. Brown, the Master of H.M.S. *Winchester*, has drawn up the following sailing directions:—

---

* A sunken rock of 15 feet was discovered and announced in 1853. It bears from the *Roman Rock* N.N.E ½ E., about 1½ cables' lengths, and N.E ¼ N. from the Light Vessel.

When a vessel has rounded the Cape of Good Hope from the westward, the above mentioned light will open clear of Miller Point on the bearing of N. by E., and, if it be intended to work up False Bay, between the Whittle Rock and the western shore, the light should not be brought to the westward of N. by W. ¼ W. until she is well up with the high land about Miller Point, and consequently to the northward of the Whittle; nor should the light be brought at any time to bear to the eastward of North, on account of the rocks off the western shore.

If the vessel is to work up to the eastward of the Whittle, the light should not be brought to the North of N.N.W. ½ W., in order to avoid that rock; nor to the westward of N.W. by W. ½ W., so as to give a sufficient berth to Seal Island and the shoal near it. But by whichever of those channels a ship approaches, short tacks should be made until certain of being within 5 miles of the light.

With a leading wind the light may be brought to bear N. by W., which will clear the Whittle; and that course should be continued till within a mile of the light. The Light Vessel must then be well opened on the port bow, so as to round her at not less than half a mile distance. When the light has been brought to bear S.S.W., steer in West for the anchorage, and bring up in 14 to 10 fathoms, according to the weather.

When coming from the eastward round Cape Hang Klip, it will be observed that the Whittle lies nearly in a direct line between the Cape and the light; and therefore, if the wind be fair, bring the light to bear N.W. by N., and steer for it.

These instructions are intended for seamen not acquainted with Simon's Bay; those who know the passage between the Roman Rock and Noah's Ark will probably adopt it in the day time, but from the position of the Phœnix Rock, and the narrowness of the passage, all ships at night should pass to the eastward of the Light Vessel, and haul round her to the northward.—(April 1, 1845.)

In Simon's Bay, 13 or 14 sail of ships may lie moored in safety. The new moon makes high water here at 3^h. The tide seldom rises more than 3 feet, except after a storm, or some other circumstance. There is no current to be perceived in the Bay; the soundings are also regular, with a clear sandy bottom.

As you draw near Simon's Bay, you will easily distinguish its entrance by Noah's Ark, which is a smooth and level island, and at a distance resembles a pontoon; but the most conspicuous mark, and which you discover the farthest off, are those white sand downs, appearing like snow, in the hollows between the mountains to the N.W. of Noah's Ark, as they are represented in the view of the land, taken at K in the plan of False Bay, by Captain Huddart.

You may coast along near Noah's Ark, as it is steep-to, and has 9 fathoms of water close to it, leaving the Roman Rocks to starboard. The depth between Noah's Ark and the Roman Rocks is from 10 to 15 and 16 fathoms of water; from this position you should steer for the white sand downs quite to the anchorage.

The Port Regulations, which are of similar import to those at Cape Town, are as follow:—

1. On the arrival of merchant vessels in Simon's Bay, a proper berth will be pointed out to the masters thereof by the harbour master when he boards them; and no merchant vessel shall be shifted from such berth without his sanction, unless in case of emergency, when the cause of such shifting must be made known to him.

2. Should it be the intention of the master of a vessel to discharge, or receive on board, any considerable quantity of cargo, a convenient berth will be pointed out, as close to the jetty or other landing place as the safety of the vessel, and other circumstances, will admit. The vessel *must be then moored with two bower anchors*, and especial care taken not to overlay the anchors of Her Majesty's ships, *or to give them in any way a foul berth*, or to give just cause to apprehend any risk or danger of injury to other vessels, of any description or nation.

3. Ships and vessels touching in Simon's Bay for water and refreshment may ride at single anchor in the outer anchorage (the line of the inner anchorage to be from the Round Tower to the North Battery), but, in this case, it is particularly recommended to veer 70 or 80 fathoms of cable, and to keep a range of the other bower cable on deck, and the anchor in perfect readiness to let go. The situation of the vessel having been taken by landmarks and depth of water, should any accident occur by which she may

Ships coming from the westward may, with safety, pass between the Bellows and the land, and between the Anvil and the Cape Point, by giving the Bellows a berth of half a mile. When between it and the land, steer E. by N. or E.N.E., keeping the point of the Cape open on the larboard bow, until the house in Buffalo Bay comes open, or the Cape Point bears N.W. by N.; then haul in N.N.E., which will lead midway between the western shore and the Trident; and when the northern point of Smidt's Winkel Bay bears W. by N. you have passed it, and may follow the before mentioned directions. But it is to be observed, that this passage ought not to be attempted without a leading wind and commanding breezes, as there is frequently a strong current setting round the Cape Point.

Sailing in by Night from the Westward, with a leading Wind.—Having made the Bellows, keep it open on the larboard bow, and pass it at half a mile distance; then steer East, 3½ miles, or until the Cape Point, if distinctly seen, bears N.W. by N., when you may steer N. by E. Having run 8 miles on this course, and having got into 22 fathoms water, you are to the northward of the Trident. Steer on N. by E. 5 miles more; you will then be abreast of the Roman Rock (marked by the Light Vessel). Should you not make out the Noah's Ark distinctly, it would be advisable to go to the eastward of the Roman; to do which, having run the before mentioned distance, steer North until you can with certainty distinguish the Peak above the Block House, and to the southward of Simon's Town; bring it to bear S.W. by W. ½ W., and haul in West for the anchorage. When the eastern extremity of the land bears S.S.E., and you are in 10 or 11 fathoms, anchor. If Noah's Ark can be distinctly seen, the directions for sailing in by day may be followed; but it is necessary, if sailing in by night, to keep a good look-out for the Roman Rock, as the sea is nearly level with its top at high water.

Working in by Night.—After passing the Bellows and Anvil as before directed, haul close to the wind on the larboard tack, and if not lying higher than N.E., you will not go near the Trident; proceed about 12 miles, or until Smidt's Winkel Berg (if it can be distinguished) bears W. by N. Then tack and stand towards it, taking care not to bring it to the northward of W. by N., on account of the Trident, nor Elsey Peak to the westward of N.W., on account of the York Shoal; or, if it is preferred to work up in-shore of the Trident, stand on 7 or 8 miles on the first tack, or until you can weather Cape Point, and stand into Buffalo Bay until the Point bears South, then stand off until it bears S.W. When drawing near the North part of Buffalo Bay, do not stand towards the land nearer than to bring the Point of the Cape S.S.W.; and, when standing off, do not bring the Cape to the westward of S.W., until you are certain of being within the Trident. Being well within the Trident, you may stand off, to bring Elsey Peak N.W., if seen, otherwise you must judge by the distance run; taking care to avoid the York Shoal, 1½ miles S. by E. of Seal Island. Be careful to avoid the Roman, also, when approaching it; the situation of which may be known in a clear night by the bearings of Elsey Peak and the Peak above and to the southward of Simon's Town, the former bearing North from it, and the latter W. by S. ½ S. Stand on to the Bay according to the directions given for "Running into the Bay at Night with a leading Wind."

N.B.—Should it become very dark or thick weather, it would be advisable to anchor, if within the Trident.

N.B.—The Roman from Noah's Ark bears N.E. ½ E. Coming from the eastward, and not being less than 2 miles from the point of Hang Klip, steer direct for the highest part of the land of Smidt's Winkel Berg, the North part of Smidt's Winkel Berg, or N.W. by N., until the Cape Point bears S.W.; then follow the before mentioned directions.

The best station you can lie in, in the road, is to bring Noah's Ark and the False Cape in one at S.S.E. ½ E. [*S.E. by E.*] The gate of the Magazine, which is distinguished from the other buildings by its size and roof, should bear S.W. by W. [*S.S.W. ½ W.*], and you should lie about 1 mile from shore, the Roman Rock bearing S.E. ½ E. about 2 miles distant, and the South or East point of Simon's Bay, at the extremity of which many rocks are to be seen, bearing S.S.E. ½ E. In this berth you have sufficient room, in case of driving, from whatever quarter the winds may happen to come, as you are quite sheltered, by the mountains, from those which blow with the greatest violence. If you should be obliged to make a long stay there, you may anchor a little farther in, till False Cape is entirely shut in by the East point of the Bay. For mooring in Simon's Bay, bring Noah's Ark S.E. by S. [*S.E. by E. ½ E.*], the Roman Rock E.S.E. ½ E. [*E. by N.*], and the Jetty S.W. by W. [*S.S.W. ½ W.*], in 9 fathoms of water.

You ought to moor your vessel in this road S.E. and N.W., with this particular caution—that, from the month of May to September, your stoutest ground tackle should lie to the N.W., as the winds from that quarter blow the oftenest, and with the most violence; on the contrary, from September to May, you ought to lay it to the S.E., because the south-easterly winds are then prevailing. However, it is seldom that any vessel goes thither in the latter season, Table Bay being at that time much preferable.

If any unforeseen circumstances should not permit those who desire to put into Simon's Bay, to make the land to the eastward of the False Cape, and they should find themselves in the latitude from 35½° to 36°; so soon as they have lost the muddy bottom on the western part of the Bank of Agulhas, they should make good their course N. by W. *true*, in order to get sight of the False Cape, or of the Cape of Good Hope.

From the month of October to the month of April, the south-easterly winds, which blow then most frequently, and with the greatest violence, never continue longer than five or six days together, and are constantly succeeded by variable winds. It happens frequently too in Simon's Bay, as well as in Table Bay, in both seasons, that these winds, after blowing very hard for a whole day, and part of the night, fall toward morning, and are succeeded by a land breeze from W.N.W., by the help of which, such vessels as have got under sail at the very beginning of that breeze, may get out of Simon's Bay, and put to sea before the return of the south-easterly wind. At the worst, if they should be taken in such a position as not to be able to double the extreme point of the land, the most proper measure will be to re-enter the Bay.

THE SOUTHERN COAST, FROM FALSE BAY TO ALGOA BAY.

Sandown Bay is limited by Cape Hangklip and Cape Mudge, being about 18 miles in extent. It is entirely open from S.E. to West. The coast is abrupt, high, and rocky; but there is a small sandy beach near the mouth, and to the North of the River Onrust. Besides this river the *Palmiet* and the Bot fall into the bay. *Cape Mudge* is a bluff, high, rounded point.

Walker's Bay, to the S.E. of Cape Mudge, is an extensive bay, terminating at Point Danger, being 15 miles wide. There is also a sandy beach in this bay at the point where the little *River Krail* enters it.

DANGER POINT* is the eastern limit of Walker's Bay.

"Danger Point is a low peninsular point of land running out from the main about 6 miles in a W.S.W. direction; a ledge of rocks extends from it in the same direction nearly 2 miles, on which the sea breaks heavily. This point was formerly known as Bluff Point, but very improperly, as the high land which appears at a distance like a bluff is at least 3 leagues inside of it. *Dyer Island* is low and sandy, surrounded apparently with rocks, on which the sea breaks with great fury."—*Mr. Walker*, Queen's harbourmaster, Plymouth.

H.M. sloop *Pilot*, on her passage from the East Indies to Simon's Bay, on the 10th of July, 1847, was steering N.N.W. for Cape Hangklip, when at 4^h $10'$ a.m. breakers were reported ahead. The ship was promptly wore, but she slightly touched in coming round, though by the time she had come to the wind the water had deepened to 14 fathoms. The anchor was then dropped, and the following compass bearings were taken from her anchorage:—Cape Hangklip, N.N.W.; the bluff inside of Danger Point, N. ½ E.; extremes of Dyer Island, N. by E. to N.E. by E. ¼ E.; extreme of the Eastern Reef, E.N.E.; South Bluff, S.E.; South extreme of low land, S.E. by S. The distance of that anchorage from Dyer Island was estimated at 500 yards; and the spot on which the vessel touched was considered by Captain Wilson to be about 400 yards from the island.

Dyer's Island, above mentioned, is 5 miles S.S.E. of Danger Point; and the next headland to the East is *Quoin Point*, which is 19¾ miles N.W. ¼ W. of Cape Agulhas.

---

* Danger Point is memorable as the scene of the terrible wreck of H.M. steam troop ship *Birkenhead*, at 2^h a.m. of February 26th, 1852. She left England with troops for the Caffre war, then vigorously carried on, with 630 souls on board, and reached Simon's Bay, February 23rd, after a passage of forty-seven days. Leaving this anchorage in the evening, she struck the following morning on the rocks off Point Danger while going full speed, and in less than twenty minutes not a particle of her was visible. The vessel instantly broke up; and 438 of the officers, seamen, soldiers, and boys, out of the 630 persons on board, perished.—See *United Service Gazette*, April, 1852.

CAPE AGULHAS, the southernmost point of the African continent, lies at the distance of about 28 leagues S.E. [*E.S.E.* ½ *E.*] from the Cape Point of Good Hope.[*]

Major Rennell has said, "In passing near Cape Agulhas, I observed that the Cape itself, as well as the land for many miles to the westward of it, is too low to be seen at more than 6 leagues from an Indiaman's poop; and that about 9 leagues *W.N.W.*, *true*, from the Cape, the land rises high enough to be seen at 9 or 10 leagues. Of course this high land is set for *Cape Agulhas* by those who pass too far off to see the low land, as most do. Those who pass it from the westward, with a *scant* wind from the southward, and arrive in sight of land only in the evening, should be aware of this circumstance."

A more particular and recent description states the land of Agulhas to be even, having no high land within it for several miles in any direction; but to the *W.N.W.*, *true*, at the distance of about 5 leagues from the Cape, is a hill near the sea, which appears insulated, and is called, from its peculiar form or appearance from the eastward, the *Gunner's Quoin*. This may be seen 9 or 10 leagues off. It is always to be recollected, that the low land of the coast projects much farther to the South than any of the high land in the vicinity. The edge of the shore is uniformly rocky to a great distance, both eastward and westward of Cape Agulhas.[†]

Those from the eastward must take care in the summer months, when the S.E. winds prevail, not to fall to leeward; for it will be very difficult to gain False Bay, if a ship first makes the Cape land when to the westward of it, during a strong S.E. wind. At times ships, with stores from India, and bound into Table Bay, have been obliged to bear away for St. Helena, in consequence of passing the Cape in the night, and being unable to beat against a strong easterly wind and leeward current.

LIGHTHOUSE.—This important structure, after very much deliberation, was first illuminated on March 1, 1849. It is a fine building, consisting of a central tower, about 70 feet high, with a smaller one on each side, connected by curtain walls. It stands on an elevation of 61 feet above the mean sea level, and bears N. 30° W. mag., 520 yards distant from the extreme point of Cape Agulhas. Lat. of the light 34° 49′ 45·7″, lon. 20° 0′ 40″; and 1^{h} 20′ 2·67″ E. of Greenwich; or 1° 31′ 55″, or 0^{h} 6′ 7·67″ E. of the Cape Observatory. This position may be considered to be an exact geographical point.

The light is a *steady white light*, and can be seen in any direction seaward between East and N.W. by W., at the distance of 6 leagues from a deck 15 feet high.

If a vessel from the *eastward* passes Struys Point at the distance of 5 miles from the shore, and steers a W. by S. course exactly, she will pass the most southerly projection of the Northumberland Point Reef at the distance of 4¼ miles, and the Light at the distance of 5½ miles, and clear Gunner's Quoin. This is the limit *northward*, within which no sailing vessel should be found. It secures every advantage that could possibly be obtained by a closer course, and at that distance the light will be brilliant.

---

[*] The Cape was called by its first discoverers, the Portuguese, *Cabo das Agulhas* (pronounced Agullias), which means *Needle's Cape*; and was so called, from the compass having *no variation* here, on the first discovery of the Cape. Lagullas, *Aguilhas*, or Lagullus, is a corruption of the original name.

[†] In reference to the southern coast of the colony, Captain Owen, in 1825, wrote as follows:—"In all parts of the coast the approach for ships is free from danger, with good anchorage ground; but being quite open, it is exposed to the Southern Ocean. During both monsoons a heavy swell sets in shore, yet there are few points where boats may not land more than half the year; and there is no doubt that vessels, properly constructed, might carry on a coasting trade with much safety and advantage. There appears, at least, one sure source of gain open to enterprise in the great *Bank of Lagullas*, which is equal to that of Newfoundland, and would probably be as productive a fishing establishment as any in the world. Salt is destructively plentiful, being the principal drawback to the fertility of the soil; while a market for salt fish may be found in every direction, including *Cape Town*, *Bourbon*, *Mauritius*, *Mozambique*, and even *India*. There are many desirable situations along the South coast for the establishment of fishing towns; among them may be enumerated Hout, Table, Simon's, and Gordon Bays, &c.—(See the *Narrative*, Vol. I., page 63.)

"All the rivers on this coast are overflowed, and their course lost during the rainy season, when the rush of water carries off the alluvial and other deposits; these are, however, returned by the constant S.E. winds that prevail during the dry weather, and which then produce bars of sand at their entrances, making most of them unnavigable for decked vessels, and often dangerous for boats of common structure, the usual rise of the spring tides seldom exceeding 5 feet."

Precautions.—In clear weather the light may be seen, when 5 or 6 miles eastward of Struys Point, from a lookout at the height of 35 feet; and if the vessel then should chance to be close in-shore, by steering the above course she might touch the shoal off Struys Point. To guard against this, when the light is first seen, *it* should be brought immediately to bear W. by N.; and keeping this bearing of the light the vessel will pass 2 miles to the southward of any danger respecting Struys Point.

Care should be taken when approaching the land before the light is discovered, for in hazy weather, or from spray in a fresh breeze, combined with the distance of Struys Point (about 15 miles), the light may be faint or altogether obscured, and the vessel may get within the line of danger. Under these circumstances, the lead should not be neglected, and the depth should not be less than 20 fathoms, without putting about immediately to the South.

The like precautions are required in the daytime, particularly in foggy weather; for the high land of Agulhas may be invisible, while the sandhills of Struys Bay and the breakers off Northumberland Point are distinctly seen. On these occasions it is difficult to determine whether the vessel is to the eastward or westward of Struys Point, because the shore features of the bay eastward of that point are similar to those of Struys Bay, although the extent is less.

Sailing vessels in particular should adhere to the rules, for if it should fall calm, the heavy swell which constantly rolls towards the shore would carry them with it, and the only resource, that of anchoring, would probably be of no avail, from the rocky nature of the bottom, combined with the swell. The *St. Mungo* is said to have been *wrecked in this way.*

Coming from the westward, the light will be seen first on a S. 57° 15′ E. bearing. The extreme end of the low ground called Gunner's Quoin Point bears N. 52° 30′ W. from the lighthouse, distant 19¾ miles, but is not visible from it. The sea was remarked breaking a long way off the point; it will, therefore, be necessary to keep off until the light becomes visible.

With the precautions here given, there will be as little danger in rounding Agulhas as in rounding the Cape of Good Hope, or indeed any other headland.

Description of the land and shore about Agulhas.—Cape Agulhas is defined to be the rocky projection from the S.E. corner of the Agulhas Promontory, the centre of which promontory is about three-fourths of a mile westward of the projection, and about 200 yards more southerly, being the most southern part of Africa.

Description of the land.—The features of the land about Agulhas distinguish it from the neighbouring headlands. A ridge-shaped undulating clump, rising from the flat ground, is separated into four ridge-shaped hills by irregular ravines running nearly true East and West. The middle ridges enter wedge-like at the East end, and are lost towards the centre, where the ravine widens to a mile in breadth. The middle ridges are the lowest; the northern and southern are nearly of equal height.

Viewed at a distance from the seaward, easterly or westerly, the North and South elevations being seen nearly end on resemble two oblong hummocks; but the former, extending more easterly, appears the highest as seen from the eastward.

Viewed at a distance from the southward, the South ridge masks the others, save at their East end; but the ravines being hid the whole appear to be united (only the South and middle ridges are noticed on the chart. They are all given on Colonel Michell's plan).

The highest part of the South ridge is 455 feet above the level of the sea, and its true meridional distance from the shore is almost exactly 1 mile. From this point the descent eastward is rather gradual. Westward the descent is at first steep, then slightly undulates. Southward it is steep, then undulates to within 300 yards of the shore, where the ground becomes flat.

On the first undulation from the shore, which is about 55 feet above the level of the sea, nearly true South of the highest point before mentioned, and N. 30° W., 520 yards from Cape Agulhas, the lighthouse is built.

This spot was selected by the masters of H.M.S. *President*, *Brilliant*, and *Rosamond* (Messrs. Rees, Russell, and Ashton), under the command of Captain Foote, R.N., in conjunction with Lieutenant Colonel Michell.

The light commands to seaward between E. and N.W. by W., or, more correctly, E. to N. 57° 15′ W.

Description of the shore.—West of the Agulhas Promontory the shore bends northwesterly, then round to the headland called Gunner's Quoin, forming an irregular, shallow incurvation of about 19 miles in breadth. Immediately to the E.N.E. of the promontory are two deep indentations, the first called *St. Mungo's Inlet;* the next is deeper and wider, and the projection which separates them is called *St. Mungo's Point.* From the last inlet the shore runs jagged to the dangerous projection called Northumberland Point, the site of the wreck of the ship *Duke of Northumberland,* which point forms the West horn of Struys Bay.

The whole of the beach, from the West of the Agulhas Promontory to Northumberland Point, consists of rugged sandstone and quartz rocks, or rocky reef, perfectly impracticable, even for a boat. At the promontory, groups of rocks prevail; at the cape, rocks and rocky reef, extending out a third of a mile. At the inlets, flat rocky reef exposed at low water for a third of a mile; thence rocky to Northumberland Point, where it is sand and reef.

Exposed to the uninterrupted oscillations of the Southern Ocean, the sea breaks heavily on this ironbound shore, particularly during southern winds. A vessel touching upon it has not the slightest chance of escaping destruction.

The coast between Northumberland Point and Struys Point, viz., of Struys Bay, is low and sandy; but a short distance from the beach there is a line of sandhills, varying from 50 to 150 feet in height, some of them covered with dark coloured bush, a feature that distinguishes the coast from Struys Point to the next point eastward of it. There is no high land sufficiently near to interfere with the distinguishing character of the hills northward of Agulhas, as viewed from the seaward.

Northumberland Point bears East from the light 3⅛ miles. It is low and sandy immediately on the beach, but a very dangerous ledge of rocks extends S. 37° 30′ E., 1 mile from the point, and a detached rock was fixed by intersection while breaking, which places it S. 58° 30′ E., 1⅛ mile from this point; and S. 81° 40′ E., 4⅛ miles from the light. The extreme of Northumberland Point Reef bears S. 77° 30′ E., 3⅝ miles nearly from the light. Westward from the point the reefs extend about one-third of a mile, and break heavily when the wind is from the S.E. In one or two places it breaks further out, but in no place exceeds half a mile.

Struys Point is the outer extreme of a number of sandhills; and, as before stated, forms the eastern horn of Struys Bay. It bears from Northumberland Point, which is the western horn, N. 79° 30′ E., 11 miles (estimated), and N. 82° 20′ E., 15 miles from the lighthouse. This point is more dangerous than Northumberland Point, inasmuch as the reefs lie much further off the shore, and there is no high land to enable the mariner to determine his position. Circumstances did not allow of this point being included in the Agulhas survey; but during a strong South-easter it was remarked from the summit of the sandhills near the point, that the reef extended seaward about 3 miles, and was then breaking with fury.

Like Northumberland Point, the colour of the water off this point changes to seaward from brown to light, then dark green, from which it may be inferred, together with the known shallowness of the water off Northumberland Point, that the lead, as well as the colour of the water, will always warn a ship of the approach of danger.

STRUYS BAY is formed by Struys Point to the East, and Northumberland Point to the West. The *landing* place is in a small bay or cove to the N.W. of Northumberland Point, sheltered by a projecting shelf of shingle from each extremity of the cove. The jetty, constructed from pieces of wreck, renders the landing easy; but at the outer horns of the shingle there is only water sufficient for a boat at quarter flood in fine weather. Three or four huts at the head of the jetty point out its position from the Bay. Immediately in the neighbourhood, on higher ground, is a stone dwelling house, with a signal staff a few yards behind it, termed the telegraph staff on the chart.

"Struys Bay is formed by Northumberland Point and Struys Point in the vicinity of Cape Agulhas. With any northing in the wind vessels may find good holding ground in Struys Bay in 7 fathoms (sand), Northumberland Point bearing S.W. by compass; with any southing in the wind the anchorage is exposed. There is an excellent boat *harbour,* formed by a reef of rocks, to enter which you must pass over a bar, which when the *Rosamond* was there did not break at all heavily, and we were informed by an inhabitant of the Bay that, by keeping close to the rocks to the northward of Northumberland Point, boats might enter at any time, and we found by following this direction we entered by the smoothest channel; when once in the boat harbour the water is perfectly smooth and the landing excellent.

" Sailing vessels should not anchor within 2 miles of this landing place. H.M. steam sloop under my command anchored in 5½ fathoms, about 1¼ miles distant from it. Vessels entering this Bay should give Northumberland Point a wide berth; the rollers break occasionally in 10 fathoms, and the reef extends fully 2 miles in a S.E. direction. There is only one house or building in the Bay, rented by a Mr. Barry, upon which a red ensign was hoisted. There are several wells in the neighbourhood, but the water is brackish. Sandhills studded with heath and brushwood are the prominent features of the surrounding country, but upon the hilly ground near Agulhas and Northumberland Points limestone is found." *

Instructions for anchoring in Struys Bay, Currents, Tides, &c.—The marks for anchoring are the large stone house near the beach, W. ½ S., and the sandy extreme of Northumberland Point, S.W. by S., in 5 fathoms, sand. Here the bottom is clear, while to the westward and nearer to the reef, where the water is smoother, the bottom is foul, rocks interspersed with patches of sand. The latter is unsafe; the cable is liable to snap from fouling the rocks, an accident that befel H.M. steam vessel *Dee*, while lying there in a light S.W. wind, accompanied by the usual swell.

Directions for anchoring.—Vessels from the westward, intending to anchor in this bay, should not bring the lighthouse to bear more westerly than W. by N. ½ N., until Northumberland Point bears N.W. ½ N. Then steer N.N.E. or N.E. by N., until the stone house before mentioned bears W.N.W. This will lead clear of the outer detached reefs off Northumberland Point. Proceed then to N.W., and bring the anchorage marks on.

The light will not be visible from this anchoring ground, owing to the swell of the intervening land.

Precautions respecting Struys Bay.—Shelter may be obtained in this bay during westerly and north-westerly winds only. None is afforded with the wind between S.W. round to the southward and East. With any of the latter winds it is unsafe, if not impossible, to ride in this bay, for the sea rises to such an extent as to break in 7 or 8 fathoms, a circumstance that was remarked on two occasions while H.M. steamer *Dee* was standing off, waiting for the weather to moderate to enable her to anchor. At the time of anchoring, although the wind had subsided for several hours, the water nearly broke in 7 fathoms, where the anchor was let go; and at the place from whence she had put to sea three days before, in 4¾ fathoms, the sea was breaking heavily. As a general rule, vessels seeking shelter in this bay in a N.W. gale should put to sea immediately after it subsides, for the wind frequently changes in a few hours from a strong N.W. to a S.E. or South point, in which case it is very difficult to work out, in consequence of the heavy sea that rises with these winds.†

Currents.—During the examination of the coast (September, 1848) no current was observed in Struys Bay, nor about the coast 2½ miles from the shore, as far to the westward of Agulhas as the letter E on the chart; but it was confidently asserted by fishermen and the residents at Struys Bay that a very strong current frequently sets to the westward round Northumberland Point.

---

* Extract from the Remarks of H.M.S. *Rosamond*, Commander J. Foote.

† The *Claudine* was wrecked in a small bay East of Struys Point, about 14 miles East of Agulhas Point, and somewhere about the spot where the *Arniston* was wrecked in 1815, through an error in the reckoning, when out of 300 persons only four or five survived. From this bay there would be as little chance of seeing the Agulhas Light, as there would be of seeing the Roman Rock from Table Bay, owing to the intervening sandhills of Struys Point, and the land near Northumberland Point. Struys Point is very dangerous, particularly to vessels from the eastward.—(*Mr. Maclear*, C. G. Hope, March 4th, 1849.)

Captain Harrington, of the steamer *Phœnix*, who passed close to the spot, to observe the scene of the wreck, says:—" The lighthouse was plainly seen from the deck, when we were abreast of the reef off Struys Point, which is a good guide for the shipping. When you shut in the lighthouse with Northumberland Point you will be in danger; therefore, a vessel coming from the eastward should keep the light well open on the starboard bow. Vessels further to the eastward than Struys Point can see the light if they are within seeing distance. No vessel should keep so close inshore in coming up along the coast, as it forms a crescent, and should it be night the vessel would run on shore; therefore I think that the lighthouse is placed in a good position."—*C. G. Hope Commercial Advertiser.*

Tides.—Circumstances did not allow of the tides being observed with due accuracy. Two copper plugs were let into rocks S.W. of the lighthouse, to mark the high and low water points nearly at spring tides. The comparisons with these plugs on October 15, 16, 18, 19, 28, 29 (1848), and an observation at the jetty in Struys Bay on October 28, give the establishment, and rise and fall, nearly similar to what prevails in Table Bay and Simon's Bay.

Magnetic Variation.—This was determined by means of two magnets, on the flat ground between the lighthouse and beach. The result (29° 20′ W.) has been employed for the compass bearings given in these instructions.*

AGULHAS BANK.—All that part of Africa, of which Cape Agulhas is the southernmost point, is surrounded by a bank of soundings, which, after the Cape's name, is called the BANK OF AGULHAS: this bank begins at 32½° of South latitude, near the coast, in lon. 29° E., and continually increases its breadth to the south-westward, till it exceeds 45 leagues; then extending to the north-westward it contracts progressively to the Cape of Good Hope, and finally terminates near the western point of St. Helena Bay. The soundings on the bank, both as to depth and quality, have been of great service to navigators, who have remarked, in general, that to the westward of Cape Agulhas the bottom is *muddy*, and to the eastward it is of *sand;* the small shells, like the husks of oatmeal, being also as peculiar to the eastern side, as the mud to the western side of the bank. The quality of the bottom, on the South of 35° 15′ (in sight of Cape Agulhas), is classed by some in three divisions, viz., mud, on the West; fine sand, mixed with various substances, in the middle; and coarse sand, mixed with coral and stones, on the East. The soundings on the North of 35° 15′ are generally very inconclusive, even with the help of the latitude: you always meet in those parts with the sea fowls called gannets, or soland geese, which are about the size of a common goose, quite white, with the extremity of the wings tipped with black, and whose flight is but short, greatly resembling that of a duck or pigeon; you may also commonly perceive seals swimming on the water; and these, with the change in the colour of sea, are sure tokens that you are upon the Bank.

We are very far from having a complete acquaintance with the nature of the Agulhas Bank; and it is very probable that there are shoal spots unsuspected, though certainly not dangerous. We have the following notice that the lead will not always give a correct indication of a ship's position:—

"March 10th, 1845, being in the longitude of Cape Agulhas, in lat. 35° 44′ S., on the Cape Reef, I sounded and found a depth of 40 to 48 fathoms, grey, muddy sand; these soundings were made with great care, and several times repeated. On the chart I found the depth to be marked 68 to 85 fathoms."—*Mr. J. Keyser*, commanding the Dutch ship *Bato.*†

The Agulhas Bank, as is well known, abounds in fish; the coasts and bays are full of them. The seal and penguin are frequently met with; and the feathered tribe hovering over are very numerous, from the noble albatross to the tiniest of the petrels; the soland geese, fat Cape hens, and many others are met with, so glutted that ships almost sail over them. With this vast abundance it may be fairly placed in comparison with the Banks of Newfoundland, and there can be no doubt but that valuable fisheries could be established.

Mr. J. A. Lloyd gives the following observations on this part:‡—"So much confidence may be placed in the barometer, that unerring friend of the seaman in these latitudes, that its minutest indications are sufficient to place the intelligent mariner on his guard, to prepare for the worst. But there is yet another phenomenon which is worthy of attention on this coast, and which does not appear to have been sufficiently noticed. It is the remarkable difference between the surface of the sea, during and after a gale of wind off the Agulhas Bank and that upon it. Three times during the gale did we enter from deep water to soundings on the Bank; and both, in leaving it, and going on to it, did we experience this most remarkable change. While in deep water we were exposed to the most turbulent and irregular seas imaginable, some apparently rising close to, and almost breaking over, our ship; and at such moments many an anxious look was cast towards the boats and spars. But no sooner did we find soundings with 60 or 75 fathoms than we were in a sea so comparatively tranquil as to be enjoyed and appreciated by all hands.

---

* These sailing directions were drawn up by Mr. Maclear, H.M. astronomer at the Cape, with the assistance of Messrs. Rees, Carr, and Skeed, of the Royal Navy.

† Verhandelingen, &c., door Tindal en Swart, 1845, p. 565.

‡ *Naut. Mag.*, 1840, p. 477.

"In rounding the Cape, therefore, under such circumstances it would, in my opinion, be highly advantageous for homeward bound vessels, both in winter and summer, on an approaching gale from N.W., W.; or S.W., to stand in for the Bank, making short boards, if possible, till the gale is over, keeping in from 75 to 55 fathoms water. The gale may probably commence at S. or S.S.W., and will most surely blow itself out, following the course of the sun.

"On the approach of a South-easter, on the contrary, it would be more advisable to keep off the Bank, where smoother water may probably be found than on it, and where the north-westerly current runs strongest. A very little experience will teach the navigator to prepare for a westerly gale, or to take advantage of a South-easter. In the first case, an unnaturally clear sky and a brilliantly defined horizon cannot deceive him when the barometer is falling, and eventually the thunder and lightning will prepare him for his struggle. On the other hand, the same clear sky with light scud flying will indicate south-easterly gales, when the barometer is steadily rising. The lighter it commences the more wind may be expected; and from that, and the long swell, the nature of the gale may be anticipated."

EASTWARD of CAPE AGULHAS the coast is variegated in its form, and all its bays are open to the S.E. Small vessels, from the Cape, visit several of these bays, for the purpose of obtaining timber, but large ships are seldom seen here. The first of these bays, affording anchorage, is that of *St. Sebastian*, within *Cape Infanta*, 16 leagues E. ¼ S. [*N.E. by E. ¾ E.*] from Cape Agulhas. It is open both to easterly and southerly winds. The water near the coast is generally deep. At the bottom of the Bay is the *Breede* or *Broad River*, the entrance of which is half a league in breadth, but obstructed by a bar of sand, great part of which is nearly dry at low water. There is anchorage in the Bay on the North side of Cape Infanta, off a fish house on the sandy beach, where a ship may be occasionally sheltered from N.W. and westerly winds. There is a fine sandy bottom in 6, 7, and 8 fathoms. *Cape Infanta* is of middling height, with sand downs over it, which, at a distance, appear like corn fields. A rock, which at times produces breakers, lies just within it on the North.*

The **JULIANA** is a dangerous shoal to the southward of the eastern point of Struy's Bay, and 13 miles E. by N. from Cape Agulhas.—(1841.)

CAPE VACCAS lies 18 leagues E.S.E. ¼ E. [*E. ¾ N.*] from Cape Infauta. Within it are the small bays called Fish Bay and Flesh Bay. A reef projects from Cape Vaccas. At 5 leagues E.N.E. ¾ E. [*N.E. ¼ E.*] from Cape Vaccas, in lat. 34° 7', is Cape St. Blas, the South point of Mossel Bay.

MOSSEL BAY.—This bay, to the N.E. of Cape St. Blas, is extensive, but open to the wind from South to East; and, with the wind blowing fresh from these points, a great swell rolls in. It is said that the S.E. gales here seldom blow more than 24 hours at a time, and generally moderate in the evening. Two brackish rivers, *Salt River* and *Brak River*, fall into the Bay, but neither will admit a boat. Near the shore, brushwood only is to be found; but a little way up the Brak River, on the North, is plenty of large timber. Beef and mutton may be procured of the farmers here at moderate prices, but vegetables and fruit are scarce. There is an islet, called Robben or Seal Island, near the shore on the West side of the Bay, near which fish are plentiful; and oysters abound on the rocks about the Cape. The water is convenient to the landing place, and is, in general, easily gotten off. The landing place is on a sandy beach, in a small bay, near a projection called Holder's Point. There is another small cove, at a quarter of a mile to the S.E. of this, where you may land when the sea is high. At the S.E. point of either of these spots a wharf or pier might be easily built; stone, timber, and limestone being abundant in the neighbourhood.

There is no danger in approaching the Bay, excepting a reef off Cape St. Blas, on which the sea generally breaks. This reef is not more than 3½ or 4 cables' length S.S.E.

---

* A particular plan of this Bay, and the entrance of Broad River, is given on the Chart of the Southern Coast of Africa.

¼ E. from the Cape. There is a small channel, of 5 fathoms, between the shoal and Cape, and steep-to on its off side. A western reddish bluff kept open of a craggy point that lies three-quarters of a mile to the westward of the Cape, bearing W. by N. ¼ N., leads about one-half or three-quarters of a cable within the reef, in 16 or 18 fathoms; and when you bring the Cape bluff to bear W.N.W. you may haul directly into the Bay, and choose your depth of water, the soundings being regular, with a sandy bottom.

The marks for anchoring are, Robben or Seal Island N.W. by W.; the Corn Magazine, a long white stone building, S.W. by S.; and the outer point South. Here are 7½ fathoms, distant from shore seven-eighths of a mile. The tide flows, on the full and change, at 3h 35′, and rises 5 feet.—Variation, 27° 54′ W., 1797. It now exceeds 29°.

KNYSNA RIVER.—The entrance of this river, a river distinguished for some of the finest land and forest in the country, lies about 16 leagues E.S.E. [*E. ¼ N.*] from Cape St. Blas. The mouth of the River is less than one-quarter of a mile in breadth, and is formed by a high, steep, and rocky coast on each side; near which are several detached rocks. From seaward it appears like the entrance of a large dock. Without the River is good anchoring ground, in 10 and 9 fathoms; a little within which, on the Bar, are only 3 fathoms at low water, but deepening within to 4 and 5 fathoms.

No ship should attempt to enter this place, unless she be in danger, and not able to keep off-shore; but, should the attempt be made, and the ship strike, the lives of the crew may be saved, little or no wind being felt between the heads, while it may blow strongly without. There is, however, a chance of getting in safely; but it is necessary to have a boat ready, with a line to run out to the rocks, in order to steady the ship. The distance across the channel, in the narrows, is 60 or 70 fathoms, and there are no rocks but what are visible.

Within the River there is room for about thirty sail of ships. Should a vessel require to be hove down, this may be done by the beach, as the shore is steep.

Upon the whole, Knysna can be considered as fit only for the admission of small vessels, which may load wood with facility, and as a good place or dock for building. Within the harbour, on the eastern side, is *Milk-wood Kraal*, said to be the most beautiful estate in the colony. The coast eastward of the harbour is fertile and well-wooded. High water, at full and change, at 3h 45′; rise, about 5 feet.

PLETTENBERG BAY.—At 4½ leagues S.E. by E. ¼ E. [*East*] from the mouth of Knysna River, lies the extremity of Cape Delgado, or Seal Cape, which forms the South side of Plettenberg Bay. Captain Owen assigns to this point, lat. 34° 4′ 48″, lon. 23° 17′ 24″. The variation of the compass here exceeds 30° W. In this Bay, meat and fowls may be purchased at a low price; vegetables are scarce; but fish may be caught in abundance near the Cape, and about a rock off the landing place. This landing place is on a sandy beach, near the Governor's storehouses, upon the western shore; at the South end of it is a brook of fresh water, the mouth of which is generally closed with a dry sandy bar. At both ends of the beach are projecting rocky points; and E.S.E., a cable's length from the South point, are some rocks, dry at low water, which break off the sea. This Bay is resorted to for timber, which is obtained from the vast forests up the country, and some of which is of very large dimensions. Whales are frequently seen here in July, August, and part of September.

Cape Delgado, or **Seal Cape**, the South point of the Bay, may be easily known by a remarkable gap in the land, about 1 mile to the westward, which, when you are a few leagues to the southward, gives the Cape the appearance of an island. The only danger in approaching the Bay is the Whale Reef, which is a circular shoal of rocks bearing S.E. by E. from the Cape, and distant seven-eighths of a mile. The sea, in general, breaks very high over it, and there is a passage three-quarters of a cable wide between it and the Cape, with 9 fathoms the least water. This channel should not be attempted but in case of necessity, as there is generally a great swell; and, when it blows strong, the wind baffles when you are near the Cape.

By giving the point a berth of 1 mile, you may pass safely to the southward, and round the East side of the Whale, which is steep, having 18 fathoms of water not more than 30 or 40 fathoms from it; and when you open the South end of the long sandy beach, with the high rocky point on the North side of Seal Hill, you are to the northward of the shoal, and, if the wind permits, may haul close into the Bay. The wind from East, southward to S.W., sets a heavy swell into the Bay; but the inhabitants say it never blows strong from the S.E. to be of any continuance.

The common anchorage is S. by E. ¾ E., three-quarters of a mile from the Governor's storehouses, being convenient for ships to take in timber: you will be in 17 or 18 fathoms of water; but by bringing the Cape to bear S. by E. ¾ E., and the Gap S.W., you will be in 8½ or 9 fathoms of water, good ground and more sheltered.

Wood may be cut near the landing place. Watering is difficult, as you have to roll the casks near 300 yards over a heavy sand, and to raft them through a surf, which frequently breaks high over the beach.

Tide flows, full and change, 3^{h} 10′; rises and falls 5 or 6 feet perpendicular: no stream or tide runs but in the morning: a strong current sets out of the Bay, between the Cape and the Whale.

From PLETTENBERG BAY eastward, to KROMME RIVER BAY, a distance of 25 leagues, the coast next the sea is described as of a moderate height, and totally destitute of any place of shelter. The depths, generally about 60 fathoms, at 5 leagues from shore. In the interior are several remarkable hills, which serve as marks and beacons for the coast; particularly the *Buffalo*, to the N.W. of Knysna; the *Five Paps*, to the N.W. of Plettenberg Bay; the *Peak*, *Haycock*, and *Table*, between Plettenberg and St. Francis' or Kromme Bay: the three latter may be descried at the distance of 30 leagues, in clear weather.

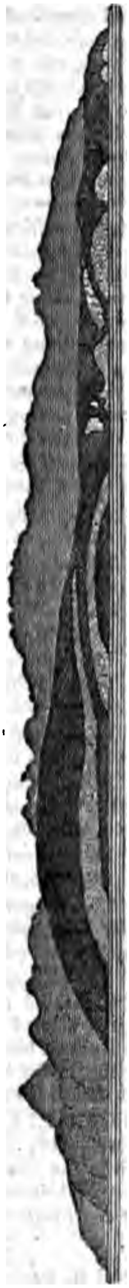
ST. FRANCIS', or CAMTOOS RIVER BAY.—This Bay is within Cape St. Francis, which, according to Captain Owen, lies in lat. 34° 10′, lon. 24° 47′ 36″. Bullocks and refreshments may be procured here. The Bay abounds with fish, but is much exposed to southerly and easterly winds; and the ground being generally rocky, it may be considered merely as a place of shelter in case of necessity. The ship *Countess of Sutherland* was here, after losing her masts at sea, from the 18th of July to the 17th of August, 1801, and experienced during this time frequent land and sea breezes, with strong winds at times from the S.E. blowing into the Bay, and rendering her situation very dangerous; the cables being much injured, and some of the anchors broken by the rocks. The best ground for a ship to moor in, appears to be a sandy spot of 7 fathoms, at a large mile from shore, with the easternmost land in sight E.S.E. ½ E. [*E. by N.*], and a round mount in one with the entrance of the River.

Kromme River is the only landing place, and that not always practicable, the surf being heavy. The deepest water at any time on the Bar is 7 or 8 feet. The vertical rise of spring tides is 5 or 6 feet. In the River the water is brackish, but there is a spring on the southern shore at about a mile up. A boat should be anchored without the surf, and the casks hauled through by ropes, when filled; for otherwise the boat may be buried in the sand.

From Kromme River to Cape Recife, the South point of Algoa Bay, the true direction of the coast from point to point is nearly East, and the distance 13½ leagues. At some places between, the depths are from 50 to 60 fathoms at 2 leagues from shore.

ALGOA BAY was discovered by Bartholomew Diaz, on September 14, 1486. He had left Cape Voltas on the West coast, and had passed round the famous Cape without seeing it, and first made the western cape of Mossel Bay, which he called Cape Vaccas, from the cattle seen there. He sailed on, and on the day mentioned arrived at a small rocky island, when he erected a second cross, calling the island Sta. Cruz, from that circumstance. He called it Bahia de la Goa, distinguishing it from Rio de la Goa to the northward. The name has since become corrupted to Algoa Bay.

It is bounded by Cape Recife to the West, and Point Padron to the East, and contains



The Land Westward of Algoa Bay, with Cape Recife N. by W. 6 miles, lat. 34° 1′ S. Taken by Captain J. W. Monteath, Dec. 15, 1818.

several islets and rocks hereafter described. It is also the site of one of the chief ports of the colony, Port Elizabeth.

CAPE RECIFE LIGHTHOUSE, which is painted with four horizontal bands, alternately red and white, stands in lat. 34° 1′ S., lon. 25° 40′ E.; the height of the building is 80 feet, but the light is elevated 90 feet above the level of the sea, and is therefore visible to a vessel 12 feet high at the distance of 17 miles, between the bearings of N. by E. round by the southward to West. The light revolves once in every minute; or when seen from a short distance, it appears to be a fixed light with bright flashes at intervals of a minute each. It was first shown April 1, 1851.

Cape Recife is low, but may be distinguished by a hummock near its extremity. The Cockscomb mountain, 5,400 feet high, bears from Cape Recife N.N.W. ½ W., whereas from Cape St. Francis, which is sometimes mistaken for it, the Cockscomb bears N.E. ¼ N. Vessels passing Cape Recife should give it a berth of not less than 4 miles to the westward, and of 2 miles to the southward, in order to avoid its dangerous reefs, towards which a strong current continually sets.*

At night the light should be always kept to the northward of E. ½ N., when within the distance of 5 miles; and vessels must immediately run out, or tack, if within that bearing. When rounding the Cape they should never come into 12 fathoms till the light bears N.W., and then they may haul in N.N.E.

The ROMAN or DISPATCH ROCK, which would be a formidable danger but for the precautions used to point it out, lies 5 miles N. by E. of Cape Recife.

The following bearings are taken by compass from the Rock, which has from 7 to 8 feet water upon it at low water:—

"The outermost rocks off Cape Recife bear S. by W. distant 5 miles; the Breast Beacons W., 1½ miles. A whitish looking rock of Rocky Point, on with the flagstaff at the Fishery, W.N.W. ½ N. Pyramid over the town, N.W. ¼ N. Store on the beach, in line with the church, N.W. ¼ N. Anchorage, N.W., distant 5 miles.

"The beacons are erected near the beach: that next the sea has a tar-barrel on the top, painted white; the mason's work also shows white at the bottom; the space between the two is black.

"The inland beacon has a white cross; and when brought in a line with the other beacon, forms like a small windmill, bearing due West from the Rock.

"A vessel entering the Bay round Cape Recife, with a proper offing, to steer N.N.E. until the Breast Beacons are in one; and when the Cross is well open with the other beacons, 2 or 3 ships' lengths, she may haul up for the anchorage N.W.

"There is sufficient room and depth of water for any ship between the Roman Rock and the main, the channel lying S. by E. and N. by W.

"The foregoing marks will point out the situation of the Rock; but it is now more efficiently marked by a beacon, which has lately been placed on it, and of which the following is the official notification.

"*The Beacon* is a black spar, with a red board across the top, and the words, 'Roman Rock' painted on it; and it floats about 7 feet above the surface, and nearly upright. As it is moored some distance, say 40 fathoms, from the inside, or western extremity of the Rock, it leaves between the beacon a safe and commodious passage; but any vessel passing in the outside, or eastward of the beacon, is particularly recommended not to approach nearer the beacon than three-quarters of a mile."†

PORT ELIZABETH, which stands about 5 miles northward of Cape Recife, as before stated, is an important seaport, though its prosperity has been greatly interfered with by the disastrous Caffre war. The following description of the port is that officially given by Captain Fairfax Moresby, C.B.

Cape Recife is a low rocky point; the breakers extend 1½ miles into the sea. The coast from this point runs *N.* 32° *W.*, *true*, 4 miles, to Beaco nor Rocky Point; off this point lies a bed of rocks; but there is sufficient water for ships to pass within a small dangerous rock, over which the sea breaks in bad weather, lying with Beacon Point W. ¾ N. by compass, and Cape Recife S. ¼ W. This rock is a small pinnacle: we frequently tried to heave the lead upon the top, but never had less than 20 feet. Ships of large tonnage should therefore give Beacon Point a good berth, in approaching Port Elizabeth.

---

* H.M. steam sloop *Thunderbolt* was proceeding from Simon's Bay to Algoa Bay, and struck on the reef off Point Recife, becoming a total wreck. This wreck was owing to the culpable hardihood of rounding this dangerous point by the eye only. Captain Owen's remarks were quoted in justification, but the Directories state the reef to reach 1½ miles off, as is repeated above. The wreck was afterwards blown to pieces with gunpowder.

† *H. G. Dunsterville*, Port Captain, April 22, 1843.

From Beacon or Rocky Point to the landing place at Markham's Cove, is N.W. by N. by compass, nearly 3 miles; sandhills, covered with bush. Immediately over Markham's Cove is Fort Frederick, which was the only landmark by which a stranger was guided to the anchorage, and this from many positions is not easily distinguished; but Lady Donkin's Pyramid, lately erected, half a mile to the S.E. of Fort Frederick, now stands conspicuous to ships approaching the land.

From *Markham's Cove* to *Ferreira River* is N. 13° E. by compass, nearly 4 miles. Between this Point and Beacon Point may be considered the anchorage of *Port Elizabeth:* the water deepens gradually from the shore; the bottom is hard sand, in which the anchors hold well. Where merchant ships have generally anchored, the ground is not so clear as farther out, arising from numerous anchors that have been left; but should Port Elizabeth ever become a place of commercial consequence, chain moorings, or even anchors of a larger size, with chain cables, should be laid down for those ships that wish to approach near the shore, for the purpose of loading or unloading. The expense would not be very great, and a small tax for such an accommodation would be cheerfully paid.

I do not make this remark from the insecurity of the Bay; for I consider it at all times equal to Table Bay, and for six months very far its superior.

His Majesty's ship *Menai* lay off Port Elizabeth from the 29th of April until the 25th of June, 1820: during that period there were only two days we could not communicate with the shore; with a S.E. wind a swell rolled in, but never any high breaking sea. Ships have, from time to time, rode during the whole year in this Bay; and some of His Majesty's ships have rode out the heaviest S.E. gales that have been known.

Had I my choice of trusting my ship, for the year round, to Torbay, in England; Palermo Bay, in Sicily; Table Bay; or Algoa Bay; I should, without hesitation, prefer the anchorage off Port Elizabeth, Algoa Bay.

From the 1st of April to the 1st of September the wind scarcely ever blows from the S.E.; and, calculating upon the average number of days that ships can communicate, and carry on their commercial occupations, Port Elizabeth infinitely surpasses Table Bay.

In proof of what I have said, not a single accident happened in landing the settlers from England (who amounted to 1,020 men, 607 women, and 2,032 children), from the period of their arrival, in the middle of April, to the day of our departure, the 25th of June. It is true, that two small coasters were wrecked last year on the same day; but, if their loss is attributed to the right cause, it will be rather to their want of good tackle, than the force of wind: even from these vessels not a man perished.

No ship should anchor nearer the shore, until the bay is cleared of anchors, than 6½ fathoms, unless they have chain cables; thus, in considering Port Elizabeth a safe anchorage, it may naturally be looked forward to as a point to which the coasting trade of the colony can be carried on on an extensive scale. Between Port Elizabeth and Table Bay, the anchorages are numerous; and there are few masters of coasting vessels in England, Holland, or France, who have not hourly more dangers to encounter, and more difficulties to surmount, than the trade from Port Elizabeth to Table Bay.

As the Export Port to the Isle Mauritius, &c., Port Elizabeth is admirably situated; and as a place for refreshment during the winter months, few seamen would risk their ships in Table Bay, or encounter the delay in beating up to Simon's Bay with a N.W. wind, when Port Elizabeth affords much easier access, and articles for refreshment at a more moderate price.

The Bay abounds in fish, and this will be soon one of its most important exports. Fresh water there is abundance of; at the expense of a few hundred rix-dollars, it might be carried to the beach in a stream sufficiently strong to water any number of ships.

The thermometer, during our stay at Port Elizabeth, at noon, varied from 68° to 58°.

The nights were cool, the morning air fresh and invigorating. High water, at full and change, 3^h 40$'$. Tide rises about 6 feet.

Such is the description of this place at the period of its first settlement; since that time it has flourished, and is now the principal port of the eastern province of the Cape Colony. As Port Elizabeth has increased in prosperity, so has the attention of the inhabitants been directed towards the improvement of the port.

The following description is therefore applicable to the present day, and is partly derived from a recent and interesting account of this part of our dominions.*

Port Elizabeth was founded in 1820, by the late Sir Rufane Donkin, the acting governor, who so named it in memory of his deceased lady. "Its population was then about 35 souls: at the present moment it is a bonding port; the value of the imports are about £120,000, the exports about £150,000. The population has increased to 3,000, almost entirely English; and the number of dwellings is rated at 300. A splendid pile of building, superior to any other in the whole colony, has just been completed for the use of the ordnance and commissariat departments, and a Place d'Armes, or Armoury. There are four places of worship, court-house, gaol, &c.

"The landing of goods and passengers at this port has hitherto been upon the open beach, through a high and frequently dangerous surf, by means of boats built expressly for the purpose, which are worked by warps from the vessels to the shore. The inconvenience of this has led the merchants to construct a pile jetty, 450 feet in length, which will allow (when completed) of steamers and coasters lying alongside. Supplies and refreshments are to be procured here at a cheaper rate, it is said, than at Table Bay, as well as necessaries for repairs.†

"The first idea of this jetty originated in an accident. The *Feejee* merchant vessel foundered at a short distance from the shore in 1837, and firmly imbedded itself in the sand. An intelligent and enterprising young merchant (Mr. John Thornhill) immediately conceived the project of turning the misfortune of this vessel to good account for the port, by using the wreck as a platform for driving the first system of piles for the construction of a wooden jetty; and, uniting with other individuals, he purchased the hull of the *Feejee*, and immediately drove the first eight piles, and the work was proceeded with as above stated; the first stone of the solid portion of the erection was laid on April 20th, 1840, the anniversary of the first British settlement 20 years before."

It was carried, with great cost, to the length of 352 feet, and was to have been extended 150 feet farther; but, unfortunately, the gale of August 26th, 1843, occasioned the destruction of the greater part of it by three or four wrecked vessels driving against it, and two of them making their way through it.

BIRD ISLAND LIGHTHOUSE. In the eastern part of Algoa Bay, off Woody Cape, which is covered with wood, is a group of small islands, on the largest of which stands a rectangular tower, painted with black and white horizontal stripes. It is 45 feet high, and carries *two fixed* lights, 18 feet apart, the upper one being 70 feet above high water, and 10 feet higher than the other. In the direction of the Doddington Rock, these lights will appear in a vertical line, one above the other.

Ferreira's River‡ is closed at the mouth by a bank of sand, except at spring tides, and is not worth notice; from hence to the mouth of the Zwartkops, is N.E. by E. ½ E. 2 miles to the shore, sandy and flat. The surf here rolls in much higher, with every sort of weather, than at Port Elizabeth.

The Zwartkops is a River of the first consequence, if Port Elizabeth should continue to flourish. From the accompanying survey of it, the capacity of its water is evident; and I have little doubt that, when commercial gain shall stimulate the merchant to enterprise, the Zwartkops will be found capable of admitting ships of considerable tonnage; in fact, there is now in the River the remains of a Dutch ship of 200 tons, and there were but few days when boats could not have come over the Bar whilst we remained at Port Elizabeth. Ships may anchor off the Zwartkops to wait for tide; but I do not consider it so safe as the anchorage off Port Elizabeth.

---

* "The Cape of Good Hope and the Eastern Province of Algoa Bay," by J. Centlivres Chase. London, 1843.

† A life-boat and the necessary adjuncts was determined to be placed in Algoa Bay by the Government in October 1847. We have not heard whether this intention is carried into effect.

‡ "*Description*," &c., by Captain Fairfax Moresby, C.B.

From the Zwartkops to the Kuga River, situated in lat. 33° 48′ 36″ S., lon. 25° 42′ 48″ E., is 5 miles. The coast, sandhills, with a flat sandy beach. The mouth of this River is closed, and the water peculiarly salt, that flows into a small lake; from hence to the Sunday River is E. 4° 35′ S., 9 miles. Between this Point and Cape Recife may be denominated ALGOA BAY.

Sunday River runs into the sea close to a remarkable rock, which I have denominated Read's Monument, in remembrance of a fine youth, a midshipman of the *Menai*, who perished, with three seamen, in the execution of their duty, whilst surveying the coast.

On its northern side, the bed of this River is deep, but the surf beats with violence over the Bar across its mouth; and, as here the coast is exposed to the constant rolling swell, little chance of its ever being useful to commercial purposes offers. There are times when boats can enter or leave Sunday River: but from its mouth commences that wild inhospitable coast, that refuses shelter to any class of shipping.

The Island of Santa Cruz, or *St. Croix*, lies S. 57° 50′ E. from the mouth of the Kuga, 3½ miles; and S. 71° 10′ W. from the mouth of the Sunday, 6 miles; it is about 2¼ in circumference. Another small rocky island, which I have called Brenton's Isle, lies S. 46° W. of St. Croix, 1⅛ miles distant, and is about three-quarters of a mile in circumference. Off the mouth of the Kuga, South, two-thirds of a mile, is the Island of Jahleel, about the same size as Brenton's Isle. Round these islands there is good anchorage; and, in the event of necessity, a ship might find partial shelter near St. Croix.* These islands are frequented by immense numbers of seals, which, at times, have literally covered their surface.

The coast from the mouth of Sunday River trends to the eastward, towards the Boshman's River. The mouth of this river I did not examine; from reports I received, it did not appear to merit attention.

From the Boshman's River, the coast continues the sameness of appearance, sandhills covered with bush.

The Bird Islands are alone visible along the whole line of coast.

To the PRECEDING DESCRIPTION of ALGOA BAY, &c., by Captain Moresby, we add the following, which displays its disadvantages. In the evening of the 11th of March, 1814, H.M.S. *Stag*, with stores from Simon's Bay, arrived in Algoa Bay, after a tedious passage, having been opposed by a continuance of strong easterly winds, with a lee current. For two days the surf rendered it impossible to land the stores, and the ship then proceeded to the Bird Islands, between which and the main she anchored on the 15th, running in by the western passage, which was previously sounded by the boats. The *Stag* again reached Algoa Bay on the 17th of March, and was detained there, from the difficulty of landing through the surf, until the morning of the 22nd, the day on which she departed.

SAILING DIRECTIONS FOR ALGOA BAY.†

In approaching Algoa Bay from the southward in clear weather, the first land that will be visible are the mountains in the interior; sketches of the most remarkable of them are given on the chart made by the officers of the *Hermes*, viz., Winterberging land and of a mountain somewhat similar, also having a serrated top. The bearings from Cape St. Francis (which is sometimes taken for Recife), and Recife are as follows:—

The Coxcomb bears by compass from Cape St. Francis N.E. ½ N., 30 miles, and from Cape Recife N.N.W. ½ W., 37 miles, and the mountain with the serrated top to the eastward of it bears N. 18° W. of Cape Recife, distant 29 miles.

These bearings will be sufficient guide in steering for the Capes referred to, when they themselves are not seen. Continuing to steer for Recife, the next land that will appear will be the high land in its immediate vicinity, on which is a horizontal line of sand that looks very much like a sandy beach, but which is not now so; afterwards Recife itself will appear a little further to the eastward, showing low but distinct as a cape, with one hummock near the extreme point. Nor will the lighthouse appear till after a further approach of 4 or 5 miles; its lat. is 34° 1′ S., lon. 25° 41′ 30″ E. No vessel should approach the Cape 4 miles to the eastward of Recife, or Recife itself nearer than 2 miles, and then only with a commanding breeze, since the reefs extend to 1¼ miles from the land, and there is a very decided and dangerous indrift: neither should any be tempted by the absence of break to approach nearer on the East side, since it often occurs that the sea does not break on a 7 foot patch a mile from the lighthouse, and yet without a moment's warning it will break in 7 fathoms.

---

* We have been informed by an intelligent officer, Mr. R. B. Sheares, that there is good anchorage, if not the best in the Bay, on the N.W. side of Saddle Island, the largest of the St. Croix's. On the outside of the islands, to the S.E., the ground is mostly foul.

† Extract from the Remarks of H.M.S. *Hermes*, Commander Fishbourne.—*Naut. Mag.*, 1851, pp. 214—217.

It is seldom prudent to approach nearer than to 13 fathoms water, when rounding Recife, or before a white stone beacon will be seen to the N.E. of the lighthouse, which, when on with it, or more accurately when its top is in one with a perpendicular line on the lighthouse, points to the 8 foot patch of the Roman Rock, and is the leading mark up to it on a course about N.N.E. ½ E. This patch bears from the lighthouse N.N.E. ½ E., 2¼ miles.

After picking up this leading mark, the eye should be carried along the side of the hill opposite to where the Roman Rock lies, and to about 2 miles from the lighthouse, where will be seen two wooden beacons, which, when in one, point to the 8 foot patch of the Roman, and from which, when in one, bear W. by N.

When the lighthouse has been brought to bear N.W. ½ W., and the soundings are from 10 to 13 fathoms, intending to go between the rock and and the main, the course may be altered to North. After running about 2 miles from the time of bringing the lighthouse N.W. ½ W., and yet some distance before the wooden beacons come in one, or when Beacon Point, which is a low sandy beach, terminating in dark brown ragged rocks is W.N.W., the white stone beacon must be brought and kept just open to the eastward of the lighthouse; this will take the vessel to the westward of the Roman in from 7 to 8 fathoms, with one or two casts of 6 fathoms, before coming up to the wooden beacons. After the wooden beacons have been brought in one, and again opened on the other side some distance, the anchorage off the town may be steered for, always giving Beacon Point a berth of a full quarter of a mile.

Intending to go to the eastward of the Roman, after having brought the lighthouse to bear N.W. ½ W., the course N.N.E. ½ E. may be steered, or any course more to the northward, that will admit of the stone beacon being kept open to the westward of the lighthouse; then when the wooden beacons have been brought in one, and again opened some distance, or when the staff and point of the Diamond on Fort Frederick have been brought in one with the centre of the remarkable hill behind it (a sketch of which is given in the chart), or if these are not seen when Beacon Point bears W.N.W., the anchorage off the town may be steered for.

The captain of the port will indicate where merchant vessels are to anchor, but sandy bottom and good holding ground is to be found anywhere in 7 fathoms. Ships will ride much safer with long scope of cable, say 60 fathoms of chain and 30 fathoms of coir (additional next the hawse) in 4 fathoms, and proportionably more in deeper water—less than the quantity indicated should never be tried in this bay, and indeed it is seldom judicious to use less.

The Roman is not, as supposed, a single rock, but a number of single rocks rising above a bed of rocks full 500 feet long.

There is a red buoy with a staff and beacon on it moored in 9 fathoms N.E., by compass, from the 8 foot patch of the Roman, outside of which vessels going to the eastward of the rock should pass, but if going to the westward they should not approach the buoy on its W. or S.W. sides nearer than 1 cable's length.

Directions for entering Algoa Bay at night.—In coming from the westward no vessel should make the light on a bearing to the southward of East, and should she from any cause have fallen to the northward, so as to have brought the light more to the southward, she must without fail haul out till the light bear East, or if she is not aware of the error or deviation due to the iron, &c., in the ship, to E. ½ S., before she arrives within 5 miles of the light. After which she may steer E.S.E. till the light bears N. by W., then E.N.E. till it bears N.W., after which she may alter course to N.N.E. until the light is brought on the latter bearing: she should not get less than 12 fathoms water, and she should go sufficiently slow to obtain soundings. The current sets in strong towards the reefs; so if she find herself dropping in, she must haul to the southward.

While steering the course indicated, viz., N.N.E., going outside the Roman, she must not on any account bring the light to the southward of S.W. ½ S. or S.W., or get less than 10 fathoms water, and if so must haul to the eastward till she has run 3 miles at least from the time of having brought the light to bear N.W.; she may then steer N.W. by N. to the anchorage. The town and vessels will appear from under the shadow of the land, as the anchorage is approached, even though no lights appear.

It is better to adhere to these directions, though lights should be seen apparently in the town or amongst the shipping, as these might be in a part of the bay North of the town, and thus deceive.

I would strongly recommend that no vessel should attempt to go to the westward of the Roman Rock at night, as the soundings are irregular, and the winds there are more baffling, the currents also set in towards the main land.

The Redwing Rock has been most carefully sought after without success, coupling which with the fact that there is no break in the place where it is said to be, leaves no doubt in my mind but that what was taken for a rock has disappeared. In Algoa Bay, and at about 10 miles N.E. by E. from the anchorage off Port Elizabeth, are the St. Croix Islands, under which there is good anchorage for all winds. Indeed it is a question, whether the town should not be near them, and under them the anchorage, for that part of the colony, the open country and the adjacent River Swartzcops, would afford no mean advantages not possessed by Port Elizabeth.

The Bird Islands, in the eastern extremity of this bay, lay off Woody Cape, which is, as its name imports, covered with wood, except a small patch of sand at its highest part, and is the only seabound land in its vicinity that is so, which gives it, in contrast with that for miles on either side, a dark appearance; the land on the West side, from near St. Croix Islands, is composed of numerous sandy hillocks quite bare of vegetation; and that to the eastward, up to Padrone Point, is nearly similar. Woody Cape is high, rugged, and not prominent, scarcely determinable as a cape, except when very near it; not so Padrone Point, which runs out into a low point of sand, forming a determined cape, without vegetation, from which breakers run out some distance. The water breaks still further off, owing to the meeting of currents at this point, and after strong winds.

The innermost danger from these islands is full 5 miles from Woody Cape, and they afford a tolerable anchorage behind them from W. to S.S.E. in 13 fathoms, which is rather better than half a mile from the northern breakers closer to them; these would afford more shelter, but the ground is foul.

These islands are very low and proportionably dangerous, and though the main land will generally be seen before them, and the distance from them estimated from it, yet this is not entirely to be relied on, and in shaping a course to go outside of them, allowance should be made for the fact that the eddy or return current sets in towards them, and then to the eastward.

*The Doddington** and western reef should be considered as part of the Bird Island reefs, and no vessel should go between them; the water does not always break on them, but in bad weather the break extends the whole way from them to the islands: the Doddington lies about 11 from Woody Cape.

There are many statements current, about breakers being to be seen from time to time in this bay during S.E. gales, yet I believe others than those laid down to have no existence, and that which has been mistaken for them is no doubt the effect of mirage. I had seen the appearance alluded to extend nearly the length of the bay, but examination and patient attention showed it all to be unreal, as it vanished by degrees as we passed along. It may be occasioned by the sudden change of temperature in the air, which, altering its capacity for moisture, causes an evaporation from the sea to take place to the lower strata, and less to the upper, which are therefore of unequal densities, and refract light in different degrees, producing the alternate appearance of white or broken water, and sea green, and regularly as the particles are set in motion, intermingling by the passage of the sea, and whose surface at the same time being smooth, but in motion, reflects the rays from different points to the eye, as it rolls along, giving the rolling over appearance of wave crest or roller. There may be a little sea at times, the effect of rain or over falls, where there are, as here, currents and irregular soundings, but nothing detrimental to navigation; while, on the contrary, the palpable change from a very considerable cross sea in N.W. gales to smooth water, which immediately follows on passing into this bay, is quite remarkable, and renders it a good refuge in such gales, almost in any part from Recife to Bird Island.

---

* The Doddington Rock derives its name from the disastrous wreck of the East Indiaman of that name, on July 17, 1755. She was outward bound in company with four other ships, and struck in the course of the night. The crew escaped to the Bird Island, where they lived seven months, during which time they built a small vessel, and got safely away to Delagoa Bay and Madagascar. A detailed account of these events will be found in the *Nautical Magazine* for February and March, 1853.

The number of cases of vessels parting their cables in the bays of the Cape of Good Hope induced me to institute inquiries with a view to ascertain the causes. The result left no doubt upon my mind but that they generally arose from the attempt to ride out gales with very insufficient quantities of cable, since there was no room to suppose that their sizes were insufficient, as is evident from a comparison of the sizes of those that parted with that of the *Hermes'* cables, or other ships of war.

POINT PADRON is 2½ leagues to the south-westward of the mouth of Boshman's River, and at the distance of 3½ leagues E. ½ S. [*N.E. by E.* ¾ *E.*] from the Bird Islands. The *Karega* and *Kasowka* are two small rivers eastward of Boshman's River, and within the distance of 2 leagues.

The CAPE CURRENTS.—For the setting of the currents about and over the edges of the Agulhas Bank, see pages 24, 77. For the passages from the Cape to England, &c., see pages 79 to 84.

PORT INSTRUCTIONS FOR ALGOA BAY.

Should it be the intention of the master of a vessel to discharge or receive on board any considerable quantity of cargo, a convenient berth will be pointed out by the port captain, as close to the landing place as the safety of the vessel and other circumstances will admit. The vessel must then be moored with two bower anchors, with an open hawse to the S.E., and especial care taken not to overlay the anchors of other vessels, or in any way to give them a foul berth. Ships or vessels touching for water and refreshments may ride *at single anchor*, but they must then anchor well to the northward, so as to prevent danger (in case of drifting) to the vessels moored; and it is particularly recommended, when riding at single anchor, to veer out 70 or 80 fathoms of chain; the other bower cable should be ranged, and the anchor kept in perfect readiness to let go: strict attention should be paid to keep a clear hawse (when moored), the more so when it is probable the wind may blow from the S.E.; and whether at single anchor or moored the sheet anchor should be ready for immediate use. The situation of the vessel must be taken by landmarks, and the depth of water; and should any accident occur, by which she may drift from such situation, or lose her anchors, the same must be notified in writing to the port captain.

It is recommended that vessels be kept as snug as possible, especially such as may have to remain some time in the anchorage, for the periodical winds blow occasionally with much violence.

Vessels having Marryatt's Code of Signals can make their wishes known to their agents, in blowing weather, through the Port Office. Vessels not having the code, can make the following with their ensigns:—

1.—*Ensign in the fore top-mast rigging.*—I am in want of a cable.

2.—*Ensign in the main top-mast rigging.*—I am in want of an anchor.

3.—*Ensign in the fore rigging.*—I have parted a bower cable.

4.—*Ensign in the main rigging.*—I am in want of an anchor and cable.

5.—*Whift where best seen.*—Send off a boat.

Whenever a red flag may be hoisted at the Port Office, it denotes that it is unsafe for any boat to land.

(Signed) H. G. DUNSTERVILLE, *Port Captain.*

Colonial Office, 6th February, 1844.

APPENDIX.

1.—REMARKS ON THE ROUTES OF STEAM VESSELS BETWEEN ENGLAND AND THE CAPE OF GOOD HOPE.—BY COMMANDER FISHBOURNE, R.N.*

Several steamers have taken the eastern passage to the Cape of Good Hope, erroneously considering that they will invariably have land and sea breezes to aid them to the southward, and that they will be enabled to get fuel, not only in sufficient quantity, but with facility. The green wood which is to be had is a very insufficient fuel for obtaining full steam, and even this is not to be procured without delay. It is far better to coal at Ascension; but even this delay may be avoided by husbanding fuel on the passage from England.

For instance, let a vessel leave England with fourteen days' coal on board, and have also the ordinary amount of sail that our men-of-war steamers have, such as the *Vixen*. Then, working expansively, and taking advantage of the winds, she need not expend more than seven days' coal before she arrives in the S.E. trade, from which she must sail, with one engine going, to the southern limits, which may thus be reached by vessels such as the *Vixen* in eight or nine days; and the westerly winds may be reached in one day more, having expended there from twelve to thirteen days' coal. These westerly winds will run her to the Cape in eight or nine days, or even to a position to fetch Mauritius with the S.E. trade in five days more. If she be bound to China, this would be advisable; though in following this route she may have gone much to the southward of her direct course to the Cape, she will yet have attained to a latitude in which the degrees of longitude are so short as nearly to compensate for that but apparent great difference. Now, let it be supposed that the same vessel shall have gone to Ascension with only the same consumption of coals, or two days' at least more. If she objects to make the detour necessary to fetch it under sail, this she cannot effect under two or six days more time. She will not then complete her coals, in the first case, under six days, and in the second case, under eight days. She will not then reach the Cape of Good Hope, if she steer direct, in fourteen days' time, and may be blown off by a South-easter, and then have to stand to the southward under sail, her coals being expended; while if she shape her course to the southward of a great sailing course, as far as may be, without increasing her distance above that of a direct course distance, she will have arrived in the westerly winds, which will run her into the Cape so as to insure fetching, though a South-easter should catch her; and this in about fifteen days, perhaps, with a saving of one or two days' coal, which are valuable to contend with any unforeseen difficulties which might occur; for instance, they might enable her to steam in against a North-wester. Then, suppose a similar vessel to make the eastern passage, and to complete her coals at Fernando Po; she will not arrive at this place till six days, at least, after another may have reached the northern limit of the S.E. trade; she will then require six days to complete her coals. She will not then reach the Cape, husbanding her coals as she may, under twenty days, for which she must have eighteen days' fuel. If she stop anywhere to obtain the four days' above her ordinary quantity, it will occupy fully eight days; if not, eight days will not be more than enough to allow for completing the passage under sail.

2.—REMARKS ON ROLLERS.—BY COMM. FISHBOURNE, R.N.

On pp. 33 to 36, will be found an account of these wonderful phenomena, which do not seem to be satisfactorily accounted for. They may have different and distinct origins; and the theory there proposed, of their being caused by distant storms, may not interfere with the opinions of Commander Fishbourne, as given below, from his experience at Ascension, &c.

---

* Of the steam vessel *Alban*.—Vide Naut. Mag., 1843, p. 182.

"The rollers are said to be very capricious in their rise and progress; but this assertion, I think, will fall before continued observation; and my experience of eight months tends to show that they render to reason a sign of their coming, if not a solution of their cause. A distant ripple, extending itself to N.W. from the extremes of land, was visible from any part of the bay or island, appearing to arise from the water outside of the island being higher than that within the bay.

"This ripple was apparent from the middle of February to August, and of greatest amount in May and June, and seems to be the result of a N.N.-westerly current, which runs during these months. This current divides at the southern extremity of each bay, preventing a direct inflow. Thence the direction of the roller must depend upon the position of the bay with respect to the current.

"They commence, however, generally from a quarter as far to southward as the southern extreme of each bay will admit of; from which direction, subsiding as they alter their progress, or sweep round the point of the bay, they disappear about five points North of the first direction. They commence in February, and become more frequent and heavy in May and June, after which they are less in size and frequency, and cease in September. I have been told that rollers come in from the North in December. This, however, is rare; but they are then quite as high, if not higher, than at any other period. While I believe the direction to be correctly stated, I think the height exaggerated, it being estimated from the effect on the pier, which effect must always be greater, all other things equal, than from any other direction, on account of the more direct action, the pier being open most to waves from North to N.E., the foul ground breaking their force when from the westward.

"The rollers were generally preceded by light and variable winds, and followed by an increase of trade wind (considerable when the rollers were highest) and an extremely attenuated atmosphere, so transparent that the Green Mountain certainly appeared but half its distance from the anchorage, and this without any increase of moisture. Once there was considerable moisture; the mountain then appeared still nearer, and the rollers were accompanied if not preceded by rain. Attention to these indications enabled me to predict the coming rollers; and though I inferred corresponding barometric changes, I was not surprised at the apparently insufficient differences, on account of the many circumstances attending to vitiate the apparent unconnected, if not corrected, results. For instance, the mountain being on the weather side of the island, and the bay on the lee, the clouds, condensed by the mountain, pass over in dense masses, assuming a singular constant triangular shape, during the afore-mentioned months, the apex of the triangle being in the N.W. Though the tide may be in some measure corrected; for when regular, its height is too irregularly modified by the rollers to admit of a correction. The concentrated heat in the bay, modified by the direction and force of the wind, producing a greater or less increase of elasticity, all tend to vitiate barometric results.

"The following may go far to elucidate the causes of the above-mentioned effects. Lieut. Bold, in his *African Guide*, says, that 'the currents have northing or southing in proportion as the trades incline towards the tropics, and their velocity is increased by an increase of trade wind.' Now, such must be the case at this place, during the months of May, June, and July, when the S.E. trade is extending its northern limit further to the northward, and will account for the strong ripple mentioned before; and also for the strong N.N.W. current, which we found in July to be running full 30 miles in 24 hours, in smooth weather, and must have been quite 35 miles during the stormy breeze, which we experienced in June. Again: the height of the barometer in this latitude being less than it is to the southward, this last increased perhaps by there being more southing in the wind in May and June, together with the fact that the rarefaction of the air in the tropics (and being greatest here about May and June) producing an ascending, consequently relieving pressure current, and to the greatest amount during these months, will tend to induce a wave in this direction from the point of greatest pressure, which must be from the South, while the sun is so far North of this latitude; and from the high barometric states, together with the descent of the superior return current in the southern latitudes, we may infer a wave will be propagated in the direction of the point of least pressure, which will be generally to the northward in this hemisphere; but I presume must be so during the months of May and June.

"If this implied want of hydrostatic equilibrium be correct, it ought to be greatest, or at least produce greatest effects on the winds, currents, and rollers, in the months of May and June. I find, on reference to the log, that the winds were of greatest force during the last days of April; but still strong through May and June. The *Edward*, of Shields, arrived here, having experienced strong winds in May: and H.M. ships *Fawn*, *Prompt*, and *Rolla*, arrived here early in June, having had to contend with strong southerly winds, with a northerly current; and referring to the remarks in the meteorological table, I find that the rollers rose heavy and most continuous in May and June.

"To account for the change of direction in the rollers, as they pass to their subsidence, I can well imagine that, as the equilibrium is in process of restoration, the currents of air and water will decrease in velocity; the wave also will decrease and alter its direction, till even re-action may produce almost an opposite direction; in which cases it must roll into bays open to the N.W. The anchorage here, and at St. Helena, being on the N.W. side of the islands, may account for the rollers being said to come from the N.W.; and it is probable that they are highest at the anchorages, from their being to leeward. The period when the rollers are said to come in from the northward being in December, at which time the sun is in high South declination, it is not improbable, I think, that the pressure may be greater to the northward than here, and hence propagate a wave in this direction. There is a singular, and, as I am told, regular process observable here; and it appears consequent upon the rollers or their causes, which is a beautiful illustration of a nice adaptation of a universal law to individual latitudes, and another of the many proofs of design with which earth, air, and ocean are strewed, bespeaking a Creator, lavish in greatness, supplying all our real wants, and bounteous in goodness and truth.

"The selvage of land round the bays where the turtle lay their eggs is increased considerably in breadth during the season of incubation. In this process of extension, it becomes shelving and easy of access; after which it appears to narrow to its original dimensions, becomes precipitous; thus affording additional space and facility of gaining it."

3.—HYGIENIC RULES FOR THE PRESERVATION OF HEALTH IN WESTERN AFRICA AND OTHER TROPICAL CLIMATES.

By WILLIAM F. DANIELL, M.D., F.R.G.S., Staff Surgeon, 2nd Class, &c.

(A large proportion of the coasts described in the preceding pages is comprised within the tropics, where climate has so marked an effect in subduing the health and energies of those natives of more temperate regions, who may be compelled to visit or reside there. These climatorial influences consequently greatly interfere with the development of commerce and the civilization of the natives of the countries these coasts limit; regions unsurpassed in their fertility and productiveness. The African coasts contrast very unfavourably with those of Brasil in respect of their salubrity, owing to the influences of the prevailing easterly wind blowing over the continent, and thus bearing malaria and deleterious hygrometric changes in the first instance, and over the genial ocean in the second.

With these remarks we would direct special attention to the ensuing directions for the preservation of health in these regions. The well known talents and skill of their author, who has favoured us with them, and whose works have been frequently quoted in the previous descriptions, will be an assurance of their efficiency and importance.—ED.)

The preservation of health under ordinary circumstances is a subject of serious consideration, but in unhealthy climates it becomes one of paramount importance. Diseases of tropical countries differ widely from those common to colder regions, and in general have a less fortunate issue. Engendered from a multiplicity of sources, they often assume an asthenic or typhoid form, run a sharp and rapid career, and, if unchecked, cease with a melancholy termination. In the alluvial and swampy districts of Western Africa, and even in the more elevated table lands, the maladies from which Europeans suffer are those generated by what has been termed *malaria*, an endemic or epidemic poison, resulting from a combination of various local and atmospheric influences. In many instances, when concentrated, they induce that morbid condition of the body which only ends with life; and as the diseases therefore proceeding from these causes are not unfrequently developed in an aggravated form, and a low insidious type, an active and energetic mode of treatment becomes immediately requisite. The climatorial agencies peculiar to the maritime countries of equinoctial Africa, have been considered to be more pernicious and unhealthy, than those emanating from other portions of the same continent; their nature and predominant characteristics have not however been satisfactorily determined; they are nevertheless sufficiently deleterious to create an enormous sacrifice of human life, and, as experience demonstrates, demand a larger amount of skill and knowledge, to combat their depressing action on the frame, than similar agencies elsewhere within the tropics. The necessity for unacclimated persons adopting certain prophylactic measures, as might enable them to withstand the attacks of the local affections, and modify their severity, is too obviously enforced, to require comment. There can be little doubt that by an efficient and judicious code of sanatory regulations, a tolerable state of health may be maintained in several of these pestilential localities for a considerable period; but at the same time it must be distinctly understood, that though such regulations may prove unable to avert the accession of sickness, they will go far towards restricting its violence, and when the ordinary febrile and dysenteric diseases are somewhat divested of their more formidable symptoms, they will have lost much of that intractable character, so difficult of management, and consequently will be rendered more amenable to the remedial effects of medicines.

The seasons on the coast of Africa may be divided into two, viz., rainy and dry, the former of which is the most unhealthy for white residents and voyagers. The African climate derives its peculiar constitution from excessive atmospheric humidity, conjoined with an elevated temperature, and the constant exhalation of local miasms, more or less influenced in their noxious prevalence and origin by various electrical laws, at present unknown and unappreciated. The following rules have chiefly guided the author, during a seventeen years' tour of service in most of the countries of Western Africa, and he has hitherto found them sufficiently effective to aid in the maintenance of good health, and the reduction probably of an otherwise heavy mortality.

1. The dress should be usually constituted of flannel, cotton, or such woollen fabrics as are best adapted for resisting the alternating vicissitudes of heat and cold. Flannel should be invariably worn next the skin, as during the rains it reduces the chilling influence of an active humidity, and in the dry and hot season absorbs the copious perspiration then exhaled, and by the moistened medium it affords, prevents direct evaporation from the cutaneous surface, a result always to be dreaded in tropical regions. In the cold and rainy season, the shirts, trowsers, and in fact the entire dress, if composed of flannel, would be found to be the best means for resisting the injurious action of a humid atmosphere or heavy showers, and their concomitant sequelæ, rheumatism and fever. The head cannot be too carefully protected from a torrid sun, and thick felt caps, or straw hats well lined, will prove most serviceable. In their selection those of a black colour should be avoided, as they absorb a greater degree of heat. The feet must also be kept well dried, and woollen socks are preferable to cotton, if they do not produce inconvenience.

2. As personal cleanliness is in every country essentially conducive to the preservation of health, it cannot but otherwise become in tropical climates one of the most important adjuncts, to other measures deemed imperatively necessary. Ablutions of the body should at least occur daily, whenever the skin is not too much heated, and suitable opportunities offer. With reference to cold baths, some precautions are requisite, and as a general rule, they ought never to be used by debilitated persons, convalescents, or others subject to special visceral diseases, or whenever the body is bathed in a profuse sweat from labour or exercise. If any chill or sensation of coldness is experienced after their employment, they must be abandoned and tepid water substituted, which, to the unacclimated visitor and others, would on the whole be found far preferable. Alluvial and muddy water from creeks, rivers, lagoons, and the embouchures of streams, or in the immediate vicinity of the coast, should never be resorted to for abluent purposes, if a purer or better quality can be elsewhere obtained. Filtration would remove, to a certain extent, the impurities that abound in fresh water. The surface of the skin immediately after every bath, should be thoroughly dried by friction from a coarse towel, if no prickly heat or other cutaneous irritation exist. When, therefore, the body or clothes have been thoroughly wet and saturated, either from accidental circumstances, from immersions, or long continued exposure to heavy rains, the garments should be first removed without delay, and the skin be well rubbed with strong spirits (rum, Schiedam, or aquadente,

would answer), until a sensation of warmth and dryness be induced. Dry clothes may then be assumed.

3. Undue exposure to the sun should be always avoided; and great care is equally necessary not to create excessive fatigue, if so exposed. The solar temperature attains its maximum from 12^h to 3^h: all physical exertions or occupations should therefore be considerably restricted within these hours. Rest from all kinds of labour during mid-day will be attended by invigorating results. Business or pleasure avocations for any distance should be deferred until the cooler hours near sunrise or sunset. Whensoever imperative duties demand noon-day visits from ship to shore, or from house to house, a cotton or silk umbrella must be employed to shield the head and eyes, from the oppressive glare and heat that ordinarily prevails. From 5^h 30′ to 6^h a.m. are the hours best adapted for rising. Previous, however, to the commencement of the toils of the day, a cup of coffee, tea, or chocolate, should be swallowed, in conjunction with a small piece of bread or biscuit. The intervals least unfavourable for travelling, shooting, or scientific excursions, visits, or general recreations, are from 6^h to 9^h a.m., and from 4^h to 7^h p.m., the coolest portions of the day. The time for repose varies from 9^h to 11^h p.m., or according to the previous habits or inclinations of each individual. Moderate horse exercise is preferable to walking, whenever attainable. The propriety of issuing stringent regulations for the prohibition of all persons sleeping without proper shelter, and thereby being exposed to the heavy night dews, and cold baneful land winds, however pleasant and refreshing they may be, cannot be too forcibly inculcated; for the surface of the skin, relaxed by constant exudations of moisture, is in that languid condition which renders it more susceptible to the predisposing morbific influences, and dysenteries or febrile affections sooner or later inevitably follow. Reclining on the damp ground after protracted exercise, or sleeping in apartments on shore with open windows, permeated by irregular currents of air, either from inland or evening sea breezes, or in houses in close proximity to swampy localities or the banks of rivers, must, whenever practicable, be avoided. The more elevated the quarters are from the ground the greater will be the degree of salubrity, and the less danger will occur by prejudicial exhalations from decomposed vegetable matter, or other refuse of the soil.

4. The acclimatization of European constitutions to the exigencies and vicissitudes of a tropical clime, principally depends on a partial change or adaptation of diet. That the permanency of good health is directly influenced by a normal state of the digestive organs, there can be no question; and the golden rule must therefore be, to use that kind of food best calculated to afford due support to the body, without inducing subsequent exhaustion or debility, by impairing their functions or increasing their activity. The means hitherto discovered most efficient for the accomplishment of this object, have been derived from the experience of aboriginal authorities. The habits and customs of the native tribes will frequently be found, in these respects, a tolerably safe guide; proper allowance being made for the moral and physical distinctions of race, previous mode of living, &c. It must ever be borne in mind, that in hot countries comparatively less food is required than in cold ones; and that the stomach, after irregular intervals, loses much of its assimilative powers; and although no precise system of dietetics can be enunciated that would conclusively embrace the comprehensive details of this subject, yet an ordinary maxim may be thus elicited, viz., that edibles most nutritious and wholesome, the indigenous products of the place, ascertained to be commonly in vogue, and prepared by the simple processes of native cookery, should, more or less, enter into the composition of the chief daily meals, the number of which must be regulated in accordance with the necessities of climate and constitution. Animal substances should invariably be well cooked; boiled meat, in the form of soups and stews, is therefore preferable to the same when roasted. More of vegetable, and less of the animal constituents, should be the fundamental principle in the disposition of meals. In tropical Africa, rice, yams, sweet potatoes, kous-kous, coco's, and young cassada roots, constitute excellent substitutes for European vegetables. The oleaginous and other dishes of the natives, composed mostly of mutton, fowls, game, fresh and dried fish, with palm oil, ochro's, peppers, yams, melochias, plantains, and other esculents, are very palatable and nourishing, and appear well adapted for European use, if visitors could only be induced to tolerate their somewhat nauseating aspect. Poultry is usually cheap and plentiful; and no better article of food could be purchased. Fish of various kinds, both dried and cured, with shrimps, crawfish, mangrove oysters, &c., can sometimes be obtained in large quantities; when fresh, they are in general of good flavour, and easy of digestion. Oranges, pineapples, guavas, melons, limes, bananas, mangoes, papaws, soursops, custard

apples, and other fruits, if immoderately eaten, tend to promote indigestion and diarrh with other irritations of the bowels, and occasionally lead to more serious disease. Wh desirable, a limited allowance should be taken early in the morning, previous to brea fast. Punctuality in meals, with a certain amount of rest after each, ought so far as convenient to be adopted, in order to facilitate the digestive process.

The judicious use of wine and spirits may be advocated, since they are not detrimen to health, and their daily enjoyment often materially contributes to the alleviation of th climatic languor and debility, resulting from an elevated temperature. Good sherry, madeira, and bucellas may be administered with advantage to invalids and others, and a few glasses at meal times is productive of an appropriate stimulus to the stomach. Po wine is commonly too much adulterated by spirituous compounds, and other noxious ingredients, to be of benefit. Weak brandy and water may be drank in moderation, througho the day, by those more habituated to the use of ardent spirits, and will in some degre mitigate the continual state of thirst. Claret (Bordeaux wine) and water is also a pleasant and cooling beverage to persons inclined for weaker potations, and not predisposed t visceral relaxations, dysenteric, and other gastro-enteritic maladies. Abstinence from *aquadente* and other sorts of inferior rum and spirits cannot be too strictly enjoined, a they not only disorder the digestive organs, but exert an injurious effect on the syste Malt liquors should likewise be drank with some caution, as they tend to produce a bilious and plethoric habit of body, and ultimately dispose to apoplectic and congestive diseases Allsopp's or Bass's pale ale are, on the whole, more preferable to bottled porter, stout, or the stronger ales, as they are manufactured of greater purity, are a milder stimulant, and less subject to unwholesome adulteration. Occasionally, they have been known to exert a remarkably tonic influence on the worn out and debilitated constitutions, of the older colonists and traders. The moderate indulgence of the passions is not prejudicial to health; but great care is requisite that their gratification becomes not habitual, so as to degenerate into excess, which is too frequently the case with residents, in tropical countries.

5. Among the predisposing causes of sickness, one of the most frequent is the dread and prostration of spirits that pervades almost every class of people, on their first visit to this unhealthy coast. The unremitting fatality of the diseases, united with the depressing influences of climate, have certainly gained for this part of the globe, an unenviable notoriety, which time can never dissipate. Notwithstanding the array of fearful drawbacks, individuals may reside in the majority of these regions, unimpaired in health or constitution, for a considerable number of years, by proper care and attention to hygienic considerations, by cheerfulness and confidence relative to future results, regularity and a tropical adaptation of diet, by a determination to resist hypochondriacal forebodings, or despondent impressions, by the appropriate employment of time in judicious mental and physical labour or recreations, and by tranquillity of mind and an implicit reliance on the ever constant protection of an all-wise Providence. By a conformity to these hints, I have known many Europeans live in some of the most sickly countries of Western Africa, for periods of twenty and thirty years, and even upwards.

INDEX.

Pta., 455
uta, or Abukuta, 402
, 401
384
s, or Islets of Sta. Bar-
263
s or Brasil Banks, 97
s Channel, 264
a, or Abbeokuta, 402
sland, 206
River, 260
River, 290
or Akkrah, 394, 398
, Point, 451
ah, 389
h, 400
e Bay, 358
, or Adampee, 384,

ee County, 396
astle, 397
, or Elmina, 390, 399
le Island, 169
le or Christian Point,

le or Don Henrique
440
Bank, 210, 211
District, 389
ure Sound, 153
Hills of, 317
ank, 309
Tribes, 384
mbo, Pta. da, 488
ta. d', 465
ta., 461
o, 461
s dos Portuguezes, and
eses, 455
or Barrow Cape, 457
Pta., 461
s, Pta. das, 455
s, Cape and Lighthouse,

s or West Bay, 455
Bank, 550
a, 399
, 384
ke, 383
Akba River, 383
ki, or Ekky Tekky, 390
da Lake, 481
, Province of, 246, 247
, St. Miguel das, 247
, Road das, 199
e, 388
, 383
s Rocks, 521
rle Point, 155

Albina, Cape, 509
Albroo Bank, 285
Alcantara, 192
Alcatrasses, or Cormorant Isles, 287
Alcobaça, 264
Alemaõ, Pta., 463
Alexander, Port, 510
Alexander I. Island, 175
Algeberana Head, 177
Algoa Bay, 553
Alligator Island, 427
Alligator Rocks, 515
Almufedas, 183, 184
Alouette Point, 437
Amanahea, 384
Amboises, Bay of, 432
Ambas or Dameh Island, 432
Ambriz, 494
Ambrizette, 492
Amelia Bank, 508
Amissa River, 386
Anajaes Point, 207
Anamaboe, 393
Anaqua River, 386
Ancoras Isles, 272
Andony River, 424
Andres Head, 339
Andrew Hardman Rock, 377
Angerstein Reef, 177
Angolares, Pta. dos, 461
Angra Fria, 512
Angra Toldo, 461
Angra Pequena, 519
Angras Puntas, 521
Angra dos Reis, 286
Anha, or Hoanha, or Morombo, 502
Anhatomirim Island, 291
Animals of the Ocean, 36
Animas, Sierra de las, 309
Anka Tribes, 384
Anna de Chaves Bay, 459
Anna de Chaves, Pico do, 458
Anno Bona, or Anno Bom, 463
Annunciaçaõ, Pta. de la, 508
Anson, 149
Antonia Viana Bank, 115
Antonia, Villa. 290
Anvil Rock, 538
Apam, 394, 398
Apipe Island, 306
Apollonia, 388
Appi, or Appee, 401
Aracaju Mount, 249
Aracati, 176
Aranhas Isles, 294
Araras Island, 295
Aravat Mounts, 493

Arcé Island, 345
Arch Rock, 155
Ardrah, or Aradah, 401
Areias, Pta. das, 195
Argentina, 340
Argentine Republic, 307
Ariel Rocks? 155
Armagosa Rock, 179
Armaçao or Armazem Bay, 270
Arniston, Wreck of the, 549
Arrapira Rock, 289
Arroyo del Ataloga, 312
Arroyo del Tuyu, 311
Arvoredo Island, 290, 294
Ascension, Island of, 99
Ascension Point, 339
Ashantee Country, 390
Ashanté Currency, Table of, 385
As Mamas, 455
Assema, or Chama, 389, 397
Assin, 384
Assinee, and River, 383
At Akkoo, 397
Atalaia Point and Lighthouse, 208, 216, 221, 222, 223
Atalaya Point, La Plata River, 312
Atasia or Atalaya Point, 208, 221
Athole Rock, 380
Atins, Ilha dos, 205
Attah, or Iddoh, 411
Attarpah, or River Town, 428
Aumale, Fort, 440
Aurora Isles? 161
Aves, or Boteler Rocks, 451
Axim, 388

Backasey Point and Gap, 424, 429
Badagry, 401
Baddow, or Four Towns, 379
Badejo Island, 294
Badgley, Cape, 451
Baffou Bay, 378
Bahia Blanca, 339
Bahia, or Bay of All Saints, 251
Bahia do Sol, 212
Bahia Fermosa, 229
Bahia, Province of, 249
Bahia Traizao, 229
Bald Island, 156
Balea, Pta. da, 462
Balea, Pta., 230
Balea Rock, 267
Baleur Bank, 418

Ballena Point, 309
Bamba Mount, 495
Bambaruga, Rio, 511
Banda, 472
Banda Point, 471
Banoko, 437
Bango Bay and River, 496
Barneveldt Islands, 358
Barn Point, 109
Barracoe, or Seniab, 394, 398
Barra de Furada, 270
Barragan, Ensenada de, 312
Barra do Meio, Pernaibao River, 185
Barreiros Island, 213
Barreiras-Vermelhas, 490
Barriga Branca, 455
Barrieras de Inferno, 229
Barrow or Agudo Cape, 451
Barrow Harbour, 153
Barro do Caju, 185
Basil Hall, Port, 357
Bassa Cove, 377
Bassam, Grand, 383
Bata Cove or Bight, 438
Batoa, or Bootou, 378
Batimba, 435
Bautry, or Boutry, 389, 397
Baven Point, 525
Bavian's Bay, 525
Baxo do Indio, 472
Bayadère Passage, 198
Baynyà Island, 439
Beach Point, 152
Beagle Bluff, 350
Beagle Rock, 346
Beauchêne Island, 159
Beaufort Mount, 170
Bell River, 479
Belem, or Pará, 213
Belem Bluff, 342
Belemba, 435
Bells Town, 435
Bellaco Rock, or San Estevan's Shoal, 348
Benevente, Point of, 268
Bengo or Bango Bay and River, 496
Benguela, St. Philip, &c., 504
Benguela Velha Cape, 501
Benin, 405
Benin, Bight of, 399
Benin River, or Rio Formosa, 404
Benson River, 377
Bento Rio, 416
Bereby, or Kadabboo, 381
Berg River, 524
Bellows Rock, 538
Belmonte, 260
Bergen Van Drakenstein, 542
Berkeley Sound, 149
Bermeja Head, 342
Béro or Belo River, 508
Bertioga River, 288
Bia or Krinjabo River, 383
Biafra, Bight of, 412
Biberibe River, 241
Bico do Papagaio, 456
Bight of Benin, 399
Bight of Biafra, 412
Bight of Pannavia, 437
Bimbia Village, 431
Bimbia River, 433
Bird Island Lighthouse, 556
Bird or Hollam's Bird Islet, 575
Birds of the Ocean, 38
Birkenhead, Wreck of the, 545
Biscoes Range, 169
Bissauw Beach, 376
Bituba Point, 295
Black Rocks Point, 500
Black Point Bay, 474
Blackwill Trees, 379
Blaesdale's Coral Reef, 94, 194
Blanca Bay, 339
Blanco Coast, 345
Bloobara or Blue Barra Pòint, 378
Boavista, Pernambuco, 239
Bobee, or Labou, 406
Bobia or Pirate Island, 432
Bol, Point, 521
Bom Abrigo Island, 289
Bombas Island, 291
Bom-Bom Ilheo, 454
Buonaparte's Tomb, 113
Bonnet of St. Philip, 504
Bonny River, 418
Bonny Town, 419
Booby Town, 406
Booali, or Loango, 473, 480
Boolambemba or Fathomless Point, 483
Boonia, 475
Boosempra River, 389, 390
Boossooah, 384
Boqueirao Channel, 198
Borea River, 437
Boshman's River, 557
Borodo, 407
Bosquet or Grove Point, 493
Bota Fogo, 284
Boteler or Aves Rocks, 451
Bottlenose Point, 450
Bottomless Pit, 382
Bouet, Mountain, 440
Boussa, or Boossà, 410
Bouvet Sandy Island ? 85
Bouvet's or Circumcision Island, 128
Boyd's Island, 521
Boypeda Island, 259
Bragança Band, 209, 217
Braganza, District of, 283
Brak Rock, 551
Bramidas Mountains, 523
Branco, Cape, 230
Brandenburg Castle, 388
Brass Creek, 410
Brass Town, 416
Brava Point, 310
Breede or Broad River, 551
Brenton's Island, 557
Brenton's Bay, 525
Bridgman's Island, 173
Brightman Inlet, 340
Brisant's Island, 520
Britannia Rock, 524
Broa Pequena, Pta. da, 456
Broone Rock, 381
Bross or Siréne Island, 540
Buceo Bank, 310
Buchanan, 376
Buckle Bank, 207
Buenos Ayres, 327
Buenos Ayres, Republic of, 307
Buenos Ayres, City of, 312
Buffalo Hill, 553
Bughighe, 404
Bullam Town, or Santree, 376
Bullam, 376
Bullen or Formoso Cape, 448
Bull Road, 153
Burdwoed Bank, 160
Burras, Ponta das, 454
Butteau, Great and Little, 378
Busios Islets, 286
Buzios Bay, 270

Cabedello, Fort, 230
Cabello de Velha, 205
Cabenda, or Kabenda, 477
Cabras, Point, 451
Cabras, Ilheo das, 458
Cabras, Ba. das, 454
Cabras or Goat Island, 451
Cæsar Breakers ? 85
Cæsar's Shoal, 188
Cairoçu Point, 286
Caita Bay and River, 222, 223
Caïte Bay, 207
Cajetuba Island, 209
Calabar, New River, 417
Calabar, Old River, 424
Calabar Creek, 407
Calabayo, Praya Grande de, 463
Caldwell, 375
Calema, or Rollers, 467
Calumbo, 500
Calvada Islet, 268
Calvo, Porto, 245
Camamu, Rio, 260
Camaragibe River, 245
Camaroens Mountain, 430
Camaroens River, 433
Camborella, Morro de, 292
Camboriu Island, 291
Cameua or Equimena Bay, 506
Camma River and Bay, 468
Campana or Bell Mountain, 355
Campexe, 294
Camplida Mountains, 469
Campo, Rio, 437, 438
Camucin or Camosin, Rio, 183
Cananea, 289

Canaveiros Mountain, 179
Candlemas Isles, 166
Cantanduba, or Toucinbos, 277
Cantor Point, 343
Caõ Grande and Pequeno Peaks, 458
Cape Coast Castle, 391, 398
Cape Colony, The, 522
Cape of Good Hope, 527
Cape Town, 528
Capitão, Pta. da, 454
Capibarima River, 232
Capiribe River, 241
Carapatitiva Island, 205
Caracas, or Seven Island, 451
Caravelbas, 264
Caravelbas, or Caravellas, 262
Caravelles, The Three, 581
Cardos Island, 295
Cardoz Mountain, 289
Carmen, 342
Carmo, Cape, 211
Carpenter Rock, 379
Carregada, Pta. and Morro, 458
Carretas Bank, 310
Carro de Mato, 207
Casa Ferreira, 454
Cascaes Point, 477
Cascas Isle, 295
Cascavela, Mount, 179
Cassard, Channel de, 210
Castillo Isle, 289
Castelbanos, 184
Castillos, or Castelhos Rocks, 305
Castle Point and Bay, 525
Catuama, Barra, or Entrance of, 232
Catumbella dos Ostras, 503
Catumbella, or Cata-Bella River, 503
Cavallos River, 179
Cavally, 381
Cayru Hill, 338
Cerca, Bank da, 195, 201
Cerro de Monte Video, 310
Cestos, Grand, River, 377
Chama, or Asseema, 389, 397
Chapeo, Pta. do; or St. Philip's Bonnet, 504
Chapeo Virado, Point, 213
Chapman's Bay, 537
Chapman's Head, 537
Charles Folly, or Pta. San Carlos, 451
Charles Point, 151
Charrote, Pico, 458
Chartres River, 157
Chico Bank, 314
Chingelé, or Kingbelé, 476
Chision, 404
Choiseul Sound, 152
Christiansborg, Fort, Accra, 395
Christmas Harbour, 156
Chupat River, 344
Church Rock, 124
Ciara, or Seara, 179
Cimbebasia, 510
Cioppé, Rio, 183
Clara, Point, 440
Clarence, 448
Clarence Land, 169
Claudine, Wreck of the, 549
Clay-Trap, or Quanwas Mountains, 512
Climate, Coast of Africa, 366
——— Anno Bona, 18
——— Ascension, 10
——— East Coast of Brazil, 226
——— Falkland Isles, 11, 147
——— Fernando Noronha, 5
——— Fernando Po, 447
——— Cape Horn, 8
——— Maranham, 4
——— Pará, 4
——— Patagonia, 6
——— River Plata, 6
——— Isle of St. Thomas, &c., 16
——— Staten Island, 7
——— South Georgia and Sandwich Islands, 12
——— St. Helena, 11, 112
——— Tierra del Fuego, 7
——— South Shetland, 13
Coanza, or Sleeper's Bay, 499
Coati Bay, 207
Cobra, or Snake River, 388
Cobras, or Serpent's Isle, 278
Cocal, Point, 212
Cockburn Cove, 448
Cockscomb Mountains, 554
Coco Isle, 463
Coffin Harbour, 156
Colares, 212
Coley Rock, 379
Colonga Isle, 290
Colombiana, 263
Colonia del Sacramento, 311
Colorado River, 340
Colquhoun, Mount, 512
Commandatuba, Morro de, 260
Commenda, or Akatayki, 390, 398
Commercial Regulations, 216
Comus Rock, 305
Conceiçao River, 229
Conceiçao, 288, 289
Conohas River, 179
Condo, Pta. del, 448
Coney, or Dassen Isle, 526
Congo, Coast of, 481
Congo, or Zaire River, 481
Constantia Berg, 537
Consul, Pta. del, 450
Contas, Rio das, 260
Convents Hills, 351
Coomassie, 384, 390
Cook's Loaf, 394, 398
Cook, Port, 356
Coporoco, Rio, 507
Coqueiros, Point, 232
Corisco Bay, 438
Cormantine, 393, 398
Cormorant, or Alcatrasses Isle, 287
Coroa de San Gaetano, 211
Coroa Peixada, 197
Coroa Secca, 212
Coroa do Correio, 211
Coroa Vermelha, 260
Coroa Morisoca, 212
Coroa Grande Shoal, 199
Coroa Nova, 209
Coroa das Almas, 197
Corona Grande Bank, 187, 194, 197, 199
Coronation Island, 170
Corrientes, Cape, 339
Corrientes, 306
Cotandiba River, 249
Cotobray Cliffs, 390
Cousa Hill, 491
Coy Inlet, 351
Crados Lake, 403
Cramimuan River, 263
Cresson, 376
Crevecœur, Fort, Accra, 395
Crobo Hills, 396
Cross, or Sierra, Cape, 512
Cruz do Patrao, 240
Cuanza, or Coanza River, 499
Cubatao Mountains, 294
Cubo, Rio, 501
Culloh, or Curro, Great and Little, 377
Cuma, Bay of, 205
Curamo Isle, 403
Curimba, 498
Curioso, Cape, 348
Curu, 183
Curuça, Island and Point, 209
Cururippe River, 248
Currents, Agulhas, or Lagullas Current, 24
——— Anno Bona, 465
——— Between Guinea and Brazil, 20
——— Bight of Biafra, 412
——— Brazilian Current, 29, 31
——— Cape of Good Hope to Congo, 466
——— Around Cape Horn, 32
——— East, or Counter Current of Agulhas, 27
——— Coast of Africa, 370
——— Cape Frio to Rio Janeiro, 276
——— Equatorial Current, 28
——— Fernando Po, 451
——— Guinea Currents, 27
——— In General, 22
——— La Plata River, 321
——— South African Current, 27

Currents, Southern Connecting Current, 33
———— Tristan da Cunha, 119

Dalrymple's Head, 129
Dambee, or Konikey Isle, 441
Darreh, or Ambas Isle, 432
Dampier's Springs, 105
Dande, 496
Das Ambres, or Ambriz River, 494
Das Pedras, Pta., 311
Dassen, or Coney Isle, 526
Das Vinhas Isle, 294
Deceit, or Deceiver Cape, 490
Deception Isle, 172
Delgado, or Seal Cape, 552
Demonio, Pta. do, 455
Density of Sea Water, 46
Dentro, Channel de, 211, 217, 219
Depth of the Ocean, 47
Desejado, or Deseada, Cape, 524
Deserto, Monte, 520
Desire, Port, 346
Desterro, N. S. de, 293
Destreito, Praya do, 295, 296
Desvelos, or Watchman Cape, 348
Devil's Berg, 528
Devil's Hill, 388, 394, 398
Devil's Riding Ground, 105
Devil's Rock, 378, 381
Diamante, Ilheo do, 454
Diana's Peak, 109
Diana's Ridge, 113
Diaz Rock, 537
Diego Alvarez, or Gough's Isle, 124
Diego Ramires Isles, 359
Diegos, or Sonbio River, 484
Dieppe, or Sesters, 379
Diego Nunes, Pta. do, 459
Diego Vas, Pta. 463
Direction Hill, 342
Directions, Algoa Bay, 557
———— Antillas to Para, 224
———— Bahia, 256
———— Biafra to Sierra Leone, 371
———— Biafra to Congo, 489
———— Bonny River, 421
———— Brazil to Europe, 215, 335
———— Bight of Biafra, 412, 416
———— From Bight of Biafra, 570
———— Cape Horn, &c., 360
———— Congo River, 484
———— England to African *Bights, 367*
Directions, Making the East Coast of Brasil, 227
———— for Para, 215
———— Pernambuco, 239
———— East Coast of Patagonia, 360
———— Rio Janeiro to Cape Frio, 215, 336
———— Rio Janeiro to Buenos Ayres, 214, 334
———— La Plata River and Buenos Ayres, 333
———— Navigation Eastward of La Plata, 213, 333
———— St. Helena, 115
———— Simon's Bay, 542
———— Table Bay, 533
Discoloured Water, 41
Dispatch, or Roman Rock, 554
Dixcove, 389
Djurguau River, 386
Doce (Loze, or Loge), River, 493
Doce, Rio, 267
Doctor's Point, 435
Doddington, wreck of the, 559
Doddington Rock, 559
Dodo, Rio, 409
De Fogo, Rio, 465
Dog's Head, 435
Domer, or Ringdove Bank, 509
Dom Rodrigo Rock, 248
Dos Bahias, or Two Bays Cape, 345
Dos Mosquitos, 483
Dos Sulcados, Rio, 465
Dos Frades, River, 454
Dongo, 500
Donkins Bay, 524
Double-Headed Cliff, 493
Dous Montes, 479
Drewin, High land of, 381, 388
Drewin, 381
Drou, or Droo, 379
Dukes Town, 427, 428
Duminy Rock, 525
Dungeness, 352
Duque de Braganza, Presidio de, 500
Dutchman's Cap, 455
Duyker's Isle and shoal, 537
Dyer Island, 545
Dyke Island, 155

Eagle Passage, 153
East Falkland, general description, 140
Eboe (Niger River), 410
Ebo's Tribes, 419
Echo, or Ichoo, 402
Eddystone Rock, 154
Edgar, Port, 155
Edina, 376, 377
Eghi, Lake, 383
Egito, Egypto, or Tapado, Rio, 502
Egmont, Port, 157
El Broder River, 408
Elephant Bay, 506
Elizabeth, Port, 554
Elizabeth Bay, 520
Elmina, or Addina, 390, 39
Elobey Isles, 438
Elsey, Bay and Peak, 542
Embenee, or Parrot Isle, 441
Emily Shoal, North Coast of Brazil, 186
Empoongwa, or Gaboon River, 441
Encesdo do Brito, 295
Engano, or Enganador Cape, 490
Enganno, or Mistaken Cape, 358
Enguias Point, 435
English Bank, La Plata River, 323
English Road, 402
Englishman's Bank, Pernambuco, 234
Ensenada de Barragan, 312
Entrance, Mount, 349
Equimena Bay, 506
Ercules Point, 343
Eschella Bay, 285
Esclavos, Escravos, or Escardos River, 408
Escondido Creek, 342
Escrayos, Rio dos, 379
Espera Islet, 201
Espinilla Point, 311, 320
Espirito Santo, or Port Victoria, 267
Espirito Santo River, 267
Esterias, Cape, 438
Esteves, Point, 465
Ethnography of Akkrah, 395
Euspa, Cape, 508
Evout Island, 358
Exi, 404
Eyserberg, 526

Factory Island, 376
Fairweather, Cape, 351
Falkland Islands, 136
Falkland Sound, 154
Falmouth Bay, 124
False Black Point, 474
Falsa Bay, 340
False Bay, 538
Fanaes Island, 443
Fanning Head, 154
Fanté Currency, Table of, 385
Fantee County, 384–6, 390
Farallon Island, 311
Farta or Torta, Bahia, 505
Fathomless, or Boolambemba Point, 483
Fejee, Wreck of the, 556
Fermosa, Bahia, 229
Fermosa, Rio, 244
Fernambuco, Praya de, 295

Fernando Noronha, 91
Fernando Po, 445
Fernando Diaz, Pta., 461
Fernan Vas River, 468
Fernandilla House, 459
Fernao Dicas, Pta. do, 458
Ferreira's River, 556
Ferrer Islet, 347
Ferrer, or Spiring Bay, 347
Ferro Islet, Macahe, 271
Fetishe Town, 443
Fetishe Wood, 483
Feya Rock, 290
Figo, Pta. do, 488
Figueira Island, 289
Filana, Cape, 416
Filana, or St. Nicholas River, 416
Findlay Harbour, 154
First Narrow, 352
Fish Bay, or Great Fish Bay, 511
Fish Town, 377, 380
Fish Town, 400
Fish Hook Bay, 542
FitzRoy, Port, 152
Five Paps, 553
Flamengos, Rio dos, 509
Flora, Ponta da, 454
Flores Island and Lighthouse, 309
Florido Island, 344
Foche Point and Gap, 417
Focinho do Caō, 455
Forçados, Rio des, 408
Foreland Bluff, or Cape Juma, 491, 492
Formosa, Rio, or Benin River, 404
Formosa, Cape, 409
Fortada, 285
Fort Joinville, or Assinee, 383
Fortin, Isla do, 213
Fox Harbour, 153
Fox Bay, 155
Four Towns, or Baddou, 379
Frades, Os, 456
Frade of Macabe, 272
Frades, or Friars' Rocks, 507
Frados, Rio do, 262
Francesa Islet, 268
Franceses, Porto dos, 232
Frederiksburg, or Brandenburgh Castle, 388
French Road, 402
Fresco, or Lagos River, 382
Fria, Angra, 512
Friars Hills, 351
Friars Rocks, or Os Frades, 507
Friars Head, 286
Frio, Cape, 272
Frio, Island of, 272
Frio, Port, 273
Frio, Cape, 512
Funta Mount, 491
Funta, Bay of, 491
Furada, Pta., 463
Furada, Pta., 456
Furilhaō, Point and Rocks, 512
Furo de Bareta, 211

Gabado, Pta. and Island, 463
Gaboon River, 440
Gairossu Bay, 286
Gairosa Harbour, 285
Gaivotas, Bank das, 210, 211
Gajirutiva Island, 205
Gal Island, 291
Gallegos River, 351
Gallinhas, 244
Gallovidia Island, 576
Gallinas River, 372
Gamboa, Fort, 253, 255
Gammah, 394
Gammou, 382
Garajam, Point, 437
Garça, Pedras de, 176
Garça, Pta. da, 454
Garcia da Vila, Tower of, 250
Garcia Islets, 290
Gariep, or Orange River, 522
Garopas Island, 291
Garraway, 379
Gato, or Gatto, 405
Gato Island, 294
Gavia, La, Morro, 276
Gavia Grande, Islet, 255
Gaybú Bay, 239
George Islet, 471
George Island, 109
Georgi Grego, or Jorge Island, 285
George, or West Bay, 451
Gertruda, Cape, 508
Ghan, or Ghá, 395
Gherritz Land, 169
Ginga Country, 500
Giranda, or Euspa, Cape, 508
Goat or Cabras Island, 451
Gobbi, 468
Goderich Bay, 450
Gold Coast, 364
Gold Coast, History of, 386
Gold Coast, Currency of, 387
Gold Hill, 390
Gold River, 388
Gongoloba Point, 441
Good Success Bay, 354, 356
Good Hope, Cape of, 527
Gordon's Bay, 542
Gorgues Rock, 185
Gorriti Island, 309
Gough's, or Diego Alvarez Island, 124
Govares, Point, 212
Goy, 478
Graham's Land, 169
Grain, or Pepper Coast, 276
Grand Bassam, 383
Grand Bassa, 376
Grand Cestos, or Sestros Rock, 377
Grande, Isla, 180
Grand Lahou, 382
Grand Parà, 203
Grant's Breakers, 116
Grassa, Pta., 455
Great Castelhos Rock, 305
Great Qua River, 426
Great Popoe, 400
Green Mountain, 100
Greenville, 378
Green Bank, 340
Green Point and Lighthouse, 531
Greenpatch Point, 435
Grey Channel, 156
Griwhee or Grewhe, 401
Groene River, 524
Grootezecoe River, 542
Grove, or Bosquet Point, 493
Gruwa, 381
Guamare River, 179
Guano deposits, 510
Guaraha Point and Island, 289
Guarapari Islets and River, 268
Guaratuba River, 290
Guariboa, Island of, 213
Guaritiba, Point, 284
Gubero, River, 507
Guimarens, River, 205
Gumamé Mnts., 179
Gunza, Rio, 501
Gunner's Quoin, 546
Gurrawah, Gruway, or Grewa, 381
Gurupi Island, 206

Hackous Country, 417
Haile Shoal, 277
Half Bereby, or Biriby, 381
Half Ivory Town, 382
Half or Little Drewin, 381
Half Lahou, 382
Half or Little Cavally, 381
Harbours, Bay of, 153
Harbour Regulations, St. Helena, 113
Harper, 380
Hay Brook, 450
Heliopolis Rock, 521
Henriques, Cape, 294
Henshaw's Town, 427, 428
Herald Point, 124
Hermeneg Point, 339
Hermite Island, 358
Hermoso, Mount, 339
Heybern Hill, 438
Highland River, 381
High Land of Drewin, 381
Hoanha, or Morombo River, 502
Holder's Point, 551
Hole in the Wall, 91
Hollam's Bird Islet, 515
Homem da Capa, Punta do, 462
Hoppner, Port, 357
Horatio, Cape, 451

Horn, Cape, 358
Hornos Isles, 311, 320
Horton Brook, 450
Hotspur Bank, 97, 98
Hottentot Bay, 515
Hottentotia, 510
Hout Bay, 537
Houtjes Bay, 525
Howard, Port, 155
Hybiappaba, Serras de, 185

Ibbekau, or Curamo Island, 403
Ice, Antarctic Sea, 174
Ice Islands off the Cape, 128
Ichaboe Island, 516
Iddoh or Attah, 411
Igarape Grande, 212
Iguape Bay, 179
Iguape, River, 289
Iguarassu, River, 183, 185
Ilha Grande, 285
Ilha do Principe, or Prince's Island, 452
Ilheo Secco, 520
Inaccessible Island, 117, 118
Indian Point, 472, 473
Indian Bar, 473
Indio, Point and Light vessel, 312
Infanta, Cape, 551
Inkran, 384
Inkran, or Inkara, 395
Ipatitinga do Norte Shoal, 294
Irmaoens, I. dos, 206
Isla Grande, 130
Itabayanna, Mount, 248
Itacolomi and Lighthouse, 188, 195
Itacolomi Island, Paranagua Bank, 290
Itacolomi Rocks, 263
Itamaraca Island, 232
Itapueu River, 290
Itapuan Point, 250
Itapacoroya Point, 290
Itaporica, Island of, 259
Itapuazinho Point, 251
Itaraca, Serras de, 260
Ivory Town, 382
Ivory, or Teeth Coast, 380

Jabatoca, Island, 206
Jaboo Country, 403
Jackin, 401
Jack, or Jaque Jacque, 382
Jack Lahou, 382, 383
Jacob's Bay, 525
Jacqua, or Waccow Creek, 407
Jaguano Island, 285
James, Fort, Accra, 395
James Island, 427
James Town, 110
Japarigue Islands, 207
Japirica Point, 207
Jaseur Reef, 355
Jason Islands, 157
Jericoácoára, 184
Jericoácoára, Point, 183
Jervis or Pilot Bank, 264, 271
Jesus Maria Point, 311
Jetuba Island, 123
Jew Jew Point, 419
Jicu Rocks, 268
Jiguia, 248
Joannes, 212
Joanna de Sauza, I. de, 463
Josè Dias Point, 290
Joaõ Sinho Islands, 205
Joasima River, 263
Johnson's Harbour, 150
Joinville Land, 173
Jo Point, 407
Jorge, or Georgi Grego Island, 285
Jucurucu, Rio, 262
Jugu Point, 418
Juguaripe River, 176
Juliana Shoal, 551
Junk River, 375
Juma Cape, or Foreland Bluff, 491, 492
Juragua, 246
Jurea Point, 289
Jutten Island, 525

Kabenda, 477, 480
Kacongo, 476
Kacongo Bay, 475
Kadabboo, or Bereby, 381
Kain's Islet, 161
Karega River, 560
Kasowka River, 560
Kattendyk's Droogte, 125
Katun Rock, 381
Kaya, 475
Kelp, Falkland Islands, 148
Kerrapay, 399
Kibbees, 394
Kibota, 472
Kids, The, 451
Kieh, 432
Kilongo, 476
Kilongo, Point, 472
Killoo, or Quiloo River, 472
King George's Bay, 156
King George's Town, 435
King Glass Town, 441
Kinghelé, 475
King's Town, 377
Kongo, or Quingo, 501
King Passols Town, 443
Kinpookoo, 473
Kisanga Point, 472
Kleine Wit Anchorage, 526
Knysna River, 552
Konikey, or Dambee Island, 441
Kong, 384
Kosie, 404
Kotrou, 382
Koussie, or Kowsie River, 524
Krail River, 545
Krinjabo, or Bia River, 383
Kromme River, 553
Kromme River Bay, 553
Kroubah, 379
Krou Settra, 379
Krou Coast and Rock, 378
Krounmen, 365
Kuga River, 557
Kumasi, or Coomassie, 384, 390

Laberinto, or Labyrinth Head, 340
Ladder Hill, 110
La Ciudad Bank, 312
L'Aigle Shoal, 160
Lafonia Peninsula, 153
La Gavia Mountain, 276
Lagea Island, 278
Lage of Conceiçao, 288
Lagoa dos Patos, 296
Lage of Santos, 288
Lagos, Rio de, or Fresco, 382
Lagos River, 402
Lagostas, Cape, 497
Lahou, 382
Lambert's Cove, 524
Lançoes Pequenos, & Grandes, 185, 186, 199
Lara Point, 312
Lapa, Enseada de, 508
Largo Island, 295
La Plata, Rio de, 305
Las Palmas Bank, 312, 313
Las Palmas River, 306
Laurel Shoal, 99
Laval Island, 439
Lavandeira Shoal, 196
Ledo, or Merry Cape, 500
Lelunda River, 491
Le Maire, Strait of, 354
Lennon's Reef, 125
Lesté, 404
Lever, 411
Lial, Punta do, 294
Liberia, 373
Lifume River, 492
Lion's Rump, 528
Lion's Paw Rocks, 537
Little Bassa River, 375
Little Corisco Island, 439
Little Fish Bay, or Bay de Mossamedes, 508
Little, or Half Cavally, 381
Little Krou, 378
Little Masula, 495
Little Popoe, 400
Lively Sound and Island, 153
Livromento, Ilha do, 192
Loacho, or Luash, 506
Loanda, Porto de, 497
Loanghilli, 473
Loango, 468, 473, 480
Loango Bay, 472
Lobito, 503
Lobos Tapilingo Islands, 290
Lobos or Norte Point, 343
Lobos de la Laguna Island, 295
Lobos Island, 313

Lobou, 406
Lobvendo Rock, 180
Locola, 477
Logito River, 502
Lolondo, 478
Longo Point and Rock, 501
Longwood, 111, 115
Looboo Wood, 473, 480
Lopez, or Lopo Gonçalves Cape, 443, 468
Lopez Island, 311
Los Posos Anchorage, 313
Louisa-Loango River, 475
Louis, Port, 150
Louis Philippe Land, 173
Louis Philippe Peninsula, 440
Louziby River, 470
Low Bay, 153
Loze, or Loge (Doce) River, 493
Luash, or Loacho, 506
Lucala River, 500
Lucena, Punta, 230
Lucina River, 496
Ludovic Point and Island, 529
Luminosity of the Sea, 39

Macahe, or S. Joaõ de Macae, 271
Macaco, Ilheo, 463
Macambaba, 276
Ma-Camma, 483
Maceio, or Maçayo, 245
Machlin, or Mackland River, 377
Macoripe, Point and Lighthouse, 179
Madeira Island, East Coast of Brazil, 285
Macuru, Pico, 451
Magalhaens, Strait of, 352
Magallanic Clouds, 45
Magoari, Cape, 212
Maidstone, or Sta. Isabel Bay, 442
Mai Martha, Punta, 456
Mai, Punta da, 455
Mar Pequeno de Iguape, 289
Malagassen Island, 525
Malaguetta Pepper Coast, 376
Malaspina, Port, 345
Maldonado, 308
Malemba, 475, 480
Malemba Point, 435
Malemba River, 436
Malouine Rock, 381
Mamas, or Paps, 499
Mananguape River, 229
Mandahu, Serra de, 183
Manduba, Point, 288
Mangal Grande, 490
Mango Secco Point, 250
Mangas Island, 205
Mangrove Coast, Brazil, 186, 194, 199
Manguinha, 248
Manijetubà Island, 207
Manna, 377
Manna River, 372
Manoel Luis Shoal, 94, 202
Man of War Road, 458
Maracasumé Island, 206
Maracay, 244
Maracuno Island, 208
Marajo Island, 212
Marambaya Island and Gulf, 284
Marambaya, Serras de, 246
Maranduba, or False Salinas, 208, 222
Maranham, 189
Maranham, Province of, 191
Maranduba Island, 208
Marapani, Point, 208
Marau, Point, 212
Mar-chiquito Lagoon, 338
Mare Harbour, 153
Margate Bluff, 490
Maria Fernandez Peak, 458
Maria's Shoal? 87
Maricas Islets, 274
Marie Amelie Peninsula, 440
Marimbendo River, 505
Marinheiros Island, 297
Markham's Cove, 556
Martin Vas Rocks, 95, 97
Masaranguape, Mount, 179
Mascus Island, 525
Massangano, Presidio of, 500
Massarandupio, Mount, 250
Massaveiro, Point, 248
Massote Cove, 500
Masula Hills, 496
Matambi River, 470, 472
Matillas, Bahia das, 508
Matooti, Point, 470
Mauree, or Moree, 393
Mavalaba, 470
Mayooba, 476
Mazula, Masula, or Mossul, 495
Mecia Alves, Bay of, 461
Mecklin River, 376
Medanos, Point, 338
Medeiros Rock, 99, 277, 288
Medo Islands, 198
Meeuwen, Island, 526
Meio, Bank do, 197
Mel, Ponta do, 176, 179
Mel, Ia. do, 289
Melançia, Mount, 183
Melo, Rio de, 459
Melville, or Caracas Bay, 451
Memoria, Punta de la, 312
Menkman Rock, 97
Meracabipe, Point of, 244
Mercury Island, 516
Mermaid, or Merman Island, 520
Merry, or Ledo Cape, 500
Mestre Alvaro, 267
Mesurado, Cape, 374
Metoutou, Point, 468
Mexias, River, 468
Michell Bay, 524
Middleton River, 409
Middle Cape, 356
Milkwood Kraal, 552
Milky Sea, 39
Minerva, Bank da, 198
Minnow, Point da, 381
Mintey Rock, 159
Miretes Reef, 182
Miriquiqui Bay, 207
Mitre Hill, 438
Moela, or Gizzard Island, 287, 288
Moffat Bay, 153
Mogotes Point, 339
Moïenza Enzaddi River, or Congo, 481
Moleques, Southern, 294
Moleques, Northern, 292
Molli, Point, 499
Molluscæ or Medusæ, 40
Mona Mazea, 483
Mona Mazea Bank, 482
Mòndoleh Island, 432
Monfort, 394
Monjuĩ Bank, 210, 211
Monrovia, 375
Monsarras, 212
Montaõ de Trigo, or Cornstack Island, 287
Montagnies Coast, 440
Monte Video, 310
Montezuma Rock, 135
Monument Rock, 95
Möondah River, 439
Möoney River, 438
Morcegos, Pta. dos, 461
Mordecai Creek, 435
Moree, or Mauree, 393
Morena, Pta., 501
Moreno, Monte, 267, 268
Morley Bank, 269
Moros, Rio, 501
Morombo or Anha River, 502
Morro de San Paulo, 259
Morro de Telha, 249
Morro Tibao, 176
Moscas, or Flies Bay, 508
Mosqueiraõ, The, 240
Mossel Bay, 551
Mossamedes, Bahia de, 508
Mossul, or Masula, 495
Mosseiro, Ponta do, 454
Motuoca Island, 206
Mouille Point and Lighthouse, 531
Mouat, Cape, 372
Mouta Seca Point, 484
Mudge Cape, 545
Muisen-burg, 538
Munden Point, 110
Mungo Creek, 435
Muricitanduba, Bank of, 206
Murubu Point, 269
Musqueiro, Point, 213
Muta, Ponta da, 260
Muxima, Presidio of, 500

Naango, or King George's Town, 441
Nahno, or Bereby River, 381
Nanna Krou, Great and Little, 379
Nassau, Fort, 393
Natal, 228
Natives, Gold, and Windward Coasts, 365
Naufragados, Point dos, 295
Nazareth, River of, 443
Needles Rocks, 109
Needle Kays, 158
Neefou, or Niffou, 379
Neetro, 377
Negra, Pta., 229, 309, 317
Negro, Cape, 274
Negro, Rio, 341
Negro, or Mossamedes Bay, 508
Negro, Monte, 509
Nemours, Fort, 383
Nereus Channel, 271
Nervion, or Goderich Bay, 450
New Calabar River, 417
Newhaven, 154
New Town or Young Town, 406
New or Young Sesters, 377
New Island, 156, 358
New Town, 405
New Year Island and Harbour, 356
Ngayo, 477
Nicephas Bay, 499
Niger or Quorra River, 409
Nightingale Island, 117
Nine Trees, 376
Ningo, 396
Ningo Grande, Hill, 396, 399
Nisus Mountain, 437
Ninfas, Point, 343
Noah's Ark, 540
North Breaker's Point, 494
Norte, or Lobos Point, 343
Northumberland Point, 548
Nossa Senhora de Guia, 230
Nossa Senhora de Nazareth, 274
Nossa Senhora da Judea, 262
Nossa Senhora do Rosario, 239
Nossa Senhora da Penha, Morro of, 267
Nossa Senhora do Desterro, 293
Nourse River, 511
Novo Redondo, 501
N'Singa, 475
Nuevo Gulf, 343
Nun, Cape, 416
Nun, River, or Niger, 409

Obaze, 404
Observatory, St. Helena, 112
Observatory, Cape Town, 528
O Capacete, 458
O Garoço or Carocha, 455
Occo, 396
Ochoro, 404
Ode, or Oddy, 404
Ohlombompole, Point, 441
Oiteros de San Miguel, 250
Old Calabar River, 424
Old Man, or O Velho Mountain, 508
Old Hole, 435
Olifant River, 524
Olinda, Point of, 233
Olinda and Pernambuco, 234
Onças, Island das, 213
O'Neils Bank, 178
Onzo, River, 495
Ooa, or Lake Cradoo, 403
Orange or Gariep River, 522
Orford, Cape, 155
Ortiz Bank, 312, 314
Os Frades, or Tinhosas Rocks, 456
Os Roques, 454
Ouro, River do, 459
O Velho Mountain, 508
Ovos, Ilha dos, 205
Owëendo, or Rodney's Point, 441
Owen Road, 153
Oyer Point, 450

Pacatuba, Mountain, 248
Pacotes Rocks, 267
Padrão or Padron, Cape, 484
Padrim, Pico, 453
Padron, Point, 560
Padram, or S. Joao, Rio, 507
Paya Island, 276
Painter's Muller, 357
Palaver, Mount, 400
Palmas Bay, 285
Palmas, Cape, 380
Palma Island, 308
Pan de Asucar, Maldonado, 309
Panella Rock, 311
Panella Rocks, 319
Panella Reef, 257
Pannavià, Bight of, 437
Pao Amarello River, 233
Paõ de Açucar, The, 276
Papagayos, Bay, 272
Papagaio, Bico do, 456
Papina Creek, 180, 183
Paps of Banda, 471
Paps, The, of Barracoe, 394, 398
Parà, or Grand Parà, 203
Paracel of San Roque, 176
Paradià River, 468
Parahyba, or Paraïba, 230, 232
Parahyba, Rio, 229
Parahyba, Province of, 230
Parana Guazu, 306
Paranagua, 289
Parana, River, 306
Parrot Island, 427
Parrot, or Emberee Isle, 441
Parry, Port, 357
Partridge Hill, 524
Paru Bay, 207
Pascoal, Mount, 260, 262
Passages, Rochfort to St. Catharine, 70
——— Over the Agulhas Bank, 77
——— Ascension and St. Helena, to the Coast of Africa, 76
——— to Brazil, 51
——— Brazil to England, 68
——— Brazil to Europe, 67
——— Brazil to the Cape of Good Hope, 76
——— Brazil to La Plata, 71
——— Canary Isles to Cape Horn, 53
——— Cape of Good Hope to England, 79
——— Cape of Good Hope to North America, 83
——— England to Ascension, 74
——— North Coast of Brazil to Europe, 67
——— Round Cape Horn, 61
——— Rio Janeiro to Cape Horn, 54
——— Rio Janeiro to Brest, 73
——— to and from St. Helena, 74
Patagonia, description of the Coast, 337
Patagonian Indians, 336
Paternoster, Point and Rocks, 525
Patos, Lagoa dos, 296
Paul's Berg, 538
Paulus Berg, 542
Paurey, 400
Pebble Sound, 158
Pedestal Point, 519
Pedra da Velha, 180
Pedra Furada, 461
Pedra da Galé, or Bird Islet, 454
Pedra das Agulhas, 455
Pedras de Garça, 175
Pedras de Pungoan Dongo, 500
Pedras, Point, 469
Pedras Tinhosas, 456
Pedrinha, Pta., 456, 465
Peixes, Pta. and Morro, 458
Pelican, Point, 513
Pembroke, Cape, 150.
Peneda, 248
Penedo de San Pedro, or St. Paul's Islets, 89
Penguins, &c., of the Falkland Isles, 143
Penguin Island, 347, 519
Penguin, or Robben Isle, 527
Pennington River, 409

Pepper, or Grain Coast, 376
Pequena, Ponta, 455
Perguiças, River, 185
Pernagoa, L., 185
Pernaibao, or Paranahyba, River, 184
Pernambuco, 234
Perro do Caõ, 168
Pescador, B. do, 459
Pesquiero Fondo, Point, 295
Peter Fortis Town, 419
Peter Ist. Island, 175
Petetinga, Point, 175
Philomel Road, 156
Phipp's Mount, 391, 398
Phœnix Bay, 540
Piauby, Province of, 185
Picaniny Lahou, 382
Picaniny Bassam, 382
Picaniny Bassa, 375
Picao, Fort, 234
Pico do San Thomé, 458
Pico Mocondom, 461
Pico Macuru, 461
Pico Negro, Pta. do, 455
Piedras, Point and Bank, 338
Piedras, Pta. das, 311
Piedras Blancas Rocks, 310
Pilot Bank, 99
Pina, Ilheo de, 507
Pinheira, Point, 295
Pinheiro, Point, 213
Pipas, Bahia das, 508
Pipas Rock, 311
Piracumbaua, Bay of, 209
Piracaua, Isle and Morro, 206
Pirarema, 197
Pirasonungo, Point, 286
Piraussu, Mount, 208
Pirate, or Bobia Isle, 432
Pirates' Creek, 483
Piruibe, 289
Piuma Islet, 269
Plata, Rio de la, 305
Plantation House, 113
Pleasant, Port, 152
Plettenberg Bay, 552
Plum-pudding Isle, 521
Poço, the, 210
Poço, or Well, Pernambuco, 234
Poçoens, Channel dos, 209, 217, 219
Pombas Isle, 212
Pomona, or Mainland, 170
Ponta de Caõ, 260
Ponta de Pedras, 232
Ponto do Tubaraõ, 267
Popoe, 400
Pontangi, or Rio Grande, 228
Porcas, Ilhas dos, 273
Porcos, or Hog Isle, 286
Poree, 396
Portalegre, 264
Porto Francez, 248
Porto Rico, 478
Porto Calvo, 245
Porto dos Franceses, 232
Porto Seguro, 260
Porto d'Ilheo, or Sandwich Harbour, 515
Porto Novo, 401
Porto Alegre, 298
Possession, Cape and Bay, 352
Possession Island, 520
Possession, Cape, 169
Postilions Cap, 461
Pottinger's Bank, 161
Powell's Group, 170
Poxim, River, 248
Pracel de Caracu, 184
Prado, 262, 263
Pram Pram, 396, 399
Pramanga, Bahia do, 462
Prancha Beach, 250
Praia Grande, Isle of, 208
Praia das Formigas, 454
Praya do Almoxarim, 461
Praya do Destreito, 295
Praya of Fernambuco, 295
Praya de Iguape, 289
Praya Lagarto, 459
Praya Lança, Pico do, 463
Praya de Lança, 461
Praya das Mangues Verdes, 186, 194, 199
Praya das Neivas, 512
Prayao, Ponta do, 461
Praya de Torres, 295
Praya Salgada, 455
Preta, Ponta, 462
Pria Unga, Bay of, 207
Pria Isle, 206
Primeiro, Cabo, 469
Princes Isle, or Ilha do Principe, 452
Pringle Bay, 542
Productions of the Falkland Isles, 142
Pry Corner, 110
Punga, Bay of, 207
Punta Rasa, 349
Pyramid Point, 465
Pyramid, The, 91

Qua, Great River, 426
Qua Mountains, 430
Quanlie Point, 441
Quanwas, or Clay-trap Mountains, 512
Quaqua Coast, 382
Quawkau Point, 441
Quebra Cabaço, Cape, 294
Queimada Grande and Chico, 288
Quenina, River, 508
Quesimi, or Quissama, River, 501
Quiape, Isle, 260
Quicinga, or Quissinga, 502
Quicombo, 501
Quilines, 312, 320
Quiloange Quiassama, 500
Quiloo, or Killoo, River, 472
Quinzanga Isle, 500
Quitanda, 498
Quitta, 399
Quitunga, or Little Masula Road, 495
Quorra, or Nun River, 409

Rabba, 411
Rae's Bay, 515
Rapa, Point, 292
Ramos, Rio dos, 508
Rasa Island, 345
Raso, Cape, 345
Rasa Island, North Coast of Brazil, 206
Ramos, Rio, 409
Raton Island, 292
Ratones Isles, Monte Video, 310
Ratos, Ilha dos, 278
Raza Island and Lighthouse, 275
Readville, 378
Real, Rio, 249
Recife, Cape and Lighthouse, 554
Recife of Brazil, 228
Recife, or Pernambuco, 236
Red Cross Hill, 100
Red Junk River, 374
Red Mount, 479
Red Point, 479, 502
Redonda, Punta, 508
Redonda Island, North Coast of Brazil, 206
Redonda, or Monte Video, 348
Redonda, or Little Quemada, 288
Redonda, or Round Island, 276
Red or Rodney's Point, 441
Redwing Rock, 559
Reggio, 406
Reid Shoal, 298
Remedios Island, 290
Restinga, or Island of Marambaya, 284
Reteiro, Great and Little Points, 176, 177
Rey, Rio del, 429
Reys Magos, Fort dos, 228
Riachuero, 315
Riberaõ, or San Lapa, 295
Richardson, Mount, 357
Richards, Port, 156
Riet Bay, 526
Rincon, The, 339
Ringdove, or Dormer Bank, 509
Rio Bento, or St. John River, 416
Rio Camamu, 260
Rio de la Plata, 305
Rio del Rey, 429
Rio de Lagos, or Fresco River, 382
Rio Doce, 267
Rio do Angra, or St. John's River, 439
Rio das Contas, 260

Rio dos Forçados, 408
Rio dos Frados, 262
Rio Dodo, 409
Rio Formosa, or Benin River, 404
Rio Grande do Norte, 228
Rio Grande de San Pedro, 296
Rio Grande de Porto Seguro, 260
Rio Ilheos, 260
Rio Janeiro, 275
Rio Parahyba, 229
Rio Real, 249
Rio Ramos, 409
Rio San Pedro, 381
Rio Seca, 267
Rio Secos, 397
Rio Sombreiro, or Tres Irmaõs, 417
Rio Una, 259
Rio Volta, 396, 399
Risco, Punta do, 455
River Town, or Allarpah, 428
Ririri Banks, 210
Robben, or Penguin Island, 527
Robert Harbour, 519
Robson's Reef, 125
Roccas, The, 94
Rock Bay, 512
Rock Cestos, 378
Rock Town, 379
Rodney Cave, 155
Rodney, or Oweendo Point, 441
Rollers, or Calèma, 467
Rolas, Ilheo das, 462
Rollers, their Origin and Effects, 33, 561
Roman, or Dispatch Rock, 554
Roman Rock and Light vessel, 540
Romey, or Horton Point, 450
Rooe Wall River, 524
Rosas Mount and Point, 338
Rossville, 378
Rough Corner, 417
Round Corner Point, 440
Ruggles Bay, 154
Rumby Mountains, 430
Rupert's Valley, 110
Ruy Perez, Cape, 512

Sabec, or Xavier, 401
Sacco Grande, 292
Sacoom River, 386
Sakkoom, or Sacoom River, 394
Salado, River, 311, 338
Saldanha Bay, 525
Salinas, Point, 505
Salinas, Falsas, Bay of, 208, 222
Salt River, 551
Salt Town, 382, 406, 407
Salvador Grande, Hillock of, 312
Salvador, Port, 154
San Antao, or Prince's Island, 452
San Antonio de la Barra, 195
San Antonio, Port, 342
San Antonio, Cape, 311, 313, 338
San Antonio Bay, 213
San Blas Inlet, 340
San Borombon, Bay of, 311
San Carlos, Point, or Charles' Folly, 451
San Carlos, Port, 154
Sand Cliff, 509
Sandown Bay, 545
Sandre Rock, 90
Sandwich Harbour, or Porto d'Ilheo, 515
Sandwich Lands, 164
Sandy Bluff, 397
Sandy Point, 474, 509
San Felipe de Monte Video, 310
San Francisco Island, 290
San Francisco, Rio, 248
San Francisco Island and Town, 290
San Gabriel Island, 311
Sangano, Porto do, 493
Sangwin, 378
San Joaõ, Bank, of, 211
San Joaõ, Isles of, 205
San Josef, Port, 310, 343
San Juan Jeronimo, 311
San Lapa, 295
San Marcos, 189
San Marcello, Fort, 253
San Matheo, River, 266
San Matias, Gulf of, 342
San Miguel Goyanna, 232
San Nicolao, Rio, or Horton Brook, 450
San Pedro Alcantara, Port, 311
San Pedro, River, 381
San Sebastiaõ, Port and Fort, 461
San Sebastiaõ or St. Sebastian, Island of, 280
Santa Anna, 295
Santa Anna Island and Lighthouse, 186
Santa Anna, Ilheo do, 454, 461
Santa Anna, Punta, 454
Santa Anna, Enseado, 461
Sant' Antonio, or Benguela Bay, 504
Santa Barbara, or Sempta River, 417
Santa Cruz River, 349
Santa Elena, Port, 344
Santa Lucia River, 310
Santa Maria Cape, 305, 308
Santa Marta Grande, Cape, 295
Santa Rosa Bank, 210
San Thomé, City of, 460
San Thomé, Cape, 269
San Thomé, or St. Thomas Island, 457
Santiago, Port of, 312
Santo Antonio, 454
Santo Antonio Bay, 454
Santo Antonio da Praia, 465
Santo Espirito Hills, 469
Sanborombom Bay, 338
Santos, 288
Santree, or Bullam Town, 376
Saõ Jeronimo, Fort, 461
Saucé, Punta del, 320
Saunders' Island, 157
Saxemburg Island, 115
Schaapen Island, 526
Sea Bear Bay, 347
Sea Dog Island, 155
Sea Lion Island, 350
Seal Cave and Island, 153
Seal, or Delgado Cape, 552
Seal Island, 519
Seal Isles, 542
Sea Lion Islands, 153
Seara, or Ceara, 179, 182
Seaweed, Falkland Islands, 148
Seasons, African Coast, 14
——— Agulhas Bank, 77
——— Bight of Biafra, 18
——— Brazil, 4
——— Cape of Good Hope, 19
——— Cape Horn, 9
——— Coast of Africa, 369
——— Congo, &c., 18, 465
——— Dahomey Coast, 15
——— Gold Coast, 16
——— in General, 1
——— Old Calabar River, 429
Seca, Rio, 267
Secondee, or Secundee, 389, 397
Sedge Island, 158
Seënna, or Cobra River, 388
Segundo, Cabo, 470
Sellada, Monte, 244
Sempta, or Santa Barbara River, 417
Sena, Punta da, 285
Sengana or Sengma River, 409
Seputuba Point, 287
Sergipe del Rey, Province of, 249
Sertaõ, The, 229
Sesters or Sestros, Little and Grand, 379
Sete Pedras, or Seven Stones, 462
Sette River, 468
Settra Krou, 378
Seven Fathoms Point, 427
Seven Hills, 496
Seven Island, 451
Seven Stones, or Sete Pedras, 462
Sha, or Devil's Rock, 378
Shag Rock, 153, 162, 347
Shark Point, 484
Shark Island, 519
Shary, or Tchadda River, 411
Shearwater Bay, 519
Shiermont's Bay, 520
Sierra Ventana, 339
Simpah, or Whinebah, 394, 398

ay, 515
Bay, 540
liver, 378
or Bross Island, 520
Rock, 348
p or Snake's Head, 537
or Esclavos River, 408
's or Coanza Bay, 499
iel, Ilheo, 463
Island, 170
Channel, 155
Head, or Slangkop
t, 537
Rocks, 523
, Puerto de, or Berkeley
d, 150
ank, 309
iro, Monte, or St.
p's Bonnet, 504
et, Swakop or Bowel
r, 512
or Diegos Bay, 484
ib or Flat Island, 379
Barranca Hills, 342
Georgia, 162
hetland, 166
ell or Eagle Island,

Ledge, 115
's Bay, 516
erta Cape, 496
or Ferrer Bay, 347
land, 158
River, 524
Harbour, 151
Island, 355
or Tower Rock, 346
oosch River, 542
s, Port, 155
n Creek, 375
ro, 240
rew's Bay, 381
e's Bay and Islets, 270
hony, Cape, 356
onio, 260
onio de Recife, 239
onio Mirim River, 245
ustin, Cape, 235
holomew, Cape, 356
ito River, 438
, Cape, 551
s or St. Blaise, Cape,

arine, Island of, 291
x or Sta. Cruz Islets,

ppe de Benguella, 504
cis or Camtoos River
553
orge D'Elmina, 390,

rge dos Ilheos, 260
ena, Island of, 108
na Bay, 524
fonso Island, 362
es' Fort, Elmina, 390
, Morro of, 270

St. Joaõ de Macae, 271
St. John's Cape and Harbour, 357
St. John's River, or Rio Bento, 416
St. John's River, 374, 376
St. John's Cape, 438
St. John's or Boosempra River, 389
St. Julian, Port, 348
St. Luis de Maranham, 189
St. Martin's Cove, 359
St. Martin's Bay, 525
St. Mary's Bay, 507
St. Mary's Cape, or Sta. Maria, 305
St. Matthias Bay, 342
St. Mungo, Wreck of the, 547
St. Mungo's Inlet, 548
St. Nicolas or Filana River, 416
St. Paul, Cape, 397, 399
St. Paulo de Loando, 498
St. Paul's Islets, or Penedo de S. Pedro, 89
St. Pedro do Sul, or Rio Grande, 296
St. Philip's Bonnet, 504
St. Philip de Benguela, 504
St. Roque, Banks of, 176
St. Roque, Cape, 175
St. Salvador, or Bahia, 251
St. Sebastian, 389
St. Sebastian Bay, 551
St. Sebastian, or Rio Janeiro, 275
St. Vincent, Cape, 355
Sta. Anna, 247
Sta. Barbara or Abrolhos Islets, 263
Sta. Catharina, 462
Sta. Catharina, Pta., 468
Sta. Magdalena, 312
Sta. Maria, or St. Mary, Cape, 507
Sta. Maria, Pta., 461
Sta. Martha, Cape, 508
Sta. Teresa, Fort, 305
Strong Tide Corner, 494
Struys Point and Bay, 548
Stump Nauss Bay, 524
Suellaba, Point, 433
Sueiro Costa, River, 383
Sugar-loaf, 109
Sugarloaf Rock, 95
Sugury River, 372
Salinas Bay, 208, 215, 220, 222
Sumacas Island, 206
Sumbe Ambelo, Porto de, 501
Sunday River, 557
Surrel's Ledge, 346
Swakop or Somerset River, 512
Swallow Rock, 379
Swarton Corner, 382
Sweet Home or Reid Shoal, 298

Sylva, Da, Vigia of, 203

Table Bay, 531
Table Island, 173
Table Mountain, 527, 528, 529
Tabo, 388
Tabou Point, 381
Tacorady, or Tacorary, 389
Tacurucu Island, 285
Tacramah, 388
Tafou Mountains, 394
Tagagipe, 251
Taguai River, 285
Tahou, 381
Taïpu Point, 211
Tamandare, Port, 245
Tamar Harbour, 158
Tamboretes Island, 290
Temma Fort, 396
Tamonha, Rio, 183
Tandil, 338
Tanza, 499
Tanoe or Tendo River, 383
Tantumquerry Point, 394, 398
Tapado or Egito Rio, 502
Tapaji, Point, 183, 184
Tapari Point, 211
Tartar Stairs, 107
Tartaruga or Turtle Bay, 508
Tartaruga, Isla da, 465
Taruoca Island, 205
Tatinga, Point, 195, 197
Tatuoca Island, 213
Taypu, Point, 288
Tchadda or Shary River, 411
Teeth or Ivory Coast, 380
Telemaque Rock and Ice Islands, 126
Temperature of Sea-water, 46
Tendo River, 384
Thetis Bay, 355
Thetis Cove and Wreck, 274
Three Anchor Bay, 537
Three Brothers, The, 354
Three Points or Benguela Velha, Cape, 501
Three Points, Cape, 345, 388
Thunderbolt, Wreck of the, 554
Tibao, Morro, 176
Tides, Abrolhos, 265
—— African Coast, 22
—— East Coast Brasil, 20
—— North Coast Brasil, 19
—— off Cape Horn, 21
—— Falkland Islands, 21
—— Gulf of San Matias, 343
—— La Plata River, 321
—— Strait of Le Maire, &c., 21, 356
—— Maranham, 190, 198
—— Patagonia, &c., 20
—— Rio Janeiro, 279
—— Isle of St. Catharine, 291
—— South Shetland, 171
Terra del Fuego, 353

Tiger Rock, 519
Tiger's Peninsula, 511
Tiger or Village Bay, 508
Tijoca or Tigioca Point, 209
Tijoucas Bay, 290
Time Balls, Cape of Good Hope, 532
Time Ball, St. Helena, 112
Time Ball, Cape Coast Castle, 393
Tinbaré Islet, 259
Tobacco Head, 427
Tobacco Mount, 377
Tobocannee Rock, 377
Tocoromi Isle, 295
Todos, or Santos, Bahia dos, 251
Toiro, or Calcanhar, Point, 175
Tom Shot's Point, 424
Toree, 401
Torre or Elephant Bay, 506
Torta, or Farta, Bahia, 505
Toucinhos, or Cantanduba, 277
Tower or Steeple Rock, 346
Trade Town, 377
Traizao, Bahia, 229
Trancoso Bay, 262
Trepow, 382
Tres Irmaõs Islands, 294
Tres Irmaõs Point, 176, 179
Tres Irmaõs Hills, 249
Tres Irmaõs, Rio dos, 417
Trident Rock, 538
Trinidada, Pta. de la, 448
Trinidad Isle, 94
Trinity Land, 170
Trist Islands, 153
Tristan da Cunha Isles, 117
Triton's Bank ? 88
Tree Isle, 205
Trumahi Bay, 206
Tubaraõ, Pta. do, 267
Tubaraõ Point, 176, 179
Tubaroes or Hog Isle, 286
Tucunanduba Isle, 205
Tumandua, Point, 206
Tuna Isle, 308, 313
Turtle Corner, 484
Turyassu, Bay of, 206
Tury, Point, 205
Turyrana, Bay of, 205
Tutoya, Barra de, 184, 185
Two Brothers' Trees, 400
Two Hills, The, 479
Two Sisters, Cape, 342
Tyssen Islands, 154

Uani, Lake, 383
Umbrella Point, 478
Una River, 289
Una, Rio, 259
Understone, 402
Union Bay, 340
Upanema River, 179
Urcas Rocks, 176
Uruguay, 307

Vaccas, Bahia dos, or Benguela, 504
Vaccas, Cape, 551
Valdes Creek, 343
Vanate, 478
Vasabarris or Sergipe River, 249
Vasconcellos, Pta. de, 459
Venangelo, Isle, 463
Ventana, Sierra, 339
Verde, Pta., 246
Vermelhos, Monte, 179
Vernon, Fort, 396
Victoria Bank, 97, 98
Victoria, or Espirito Santo, Port, 267
Victoria Harbour, 153
Vigia of M. Da Sylva, 203
Vilganbon, Fort, 278
Villa Belea da Princeza, 287
Villa Grande, Gairosu Bay, 286
Village or Tiger Bay, 508
Villa Nova, 295
Villa Viçosa, 264
Virgins, Cape, 352
Vittoria, Bahia, 253, 255
Vittoria River, 505
Vittoria Isle, 286
Volcanic Shoal, &c., near the Equator, 84
Voltas, Cape, 523
Volta, River, 396, 399
Vulcan Rock, 537
Vuulcan, Sierra, 338

Wacca, 401
Waccow, Town and Creek, 407
Walker's Bay, 545
Walton Rock, 524
Walvisch Bay, 513
Wappou, or Wappee, 379
Warley Shoal ? 86
Warree, 406
Warree or Owerree River, 408
Warree Creek, 405
Wasp's Harbour, 164
Wassaw Country, 384
Watchman's Cape, 348
Water Bay, 91
Weather, La Plata River, 314, 321
Weddell's Bluff, 350
West Falkland, General Description, 141
West Point Harbour, 157
Whale Bay, 521
Whale Rock, 527
Whale's Head, 502
Whinebah, or Simpah, 394, 398
Whittle Bank, 538
Whydah, 400
Wickham Heights, 141
Wigwam or St. Martin's Cove, 359
William, Mount, 169
William, Fort, or Phipps' Tower, 392
William, Port, 150
William Point, or Peninsula Fernanda, 448
Winds in General, 1
Wind, Indications of, 44
——— African Coast, 13
——— Agulhas Bank, 77
——— Bight of Biafra, 412
——— Coast of Brasil, 2
——— Cape of Good Hope, 19
——— Congo, &c., 466
——— Falkland Isles, 11, 145
——— Gaboon River, &c., 443
——— Land Breezes, 3
——— Pamperos, 280
——— Patagonia, 6
——— Rio de la Plata, 2
——— La Plata River, 314, 321
——— Rebojos, 280
——— Rebojos and Abrolhos, Squalls, 3
——— South Shetland, 171
Windward Coast, 364, 372
Winstanley Outfalls, 409
Wolf Rock, 152
Wollaston Isle, 558
Wooding or Rat Isle, 91
Wood's Mount, 348
Woody Bluff, 397

Xavier Isle, 294
Xavier, or Sabec, 401

Yatumba, Great and Little, 470
Yaoorie, or Youri, 409
Ybego, 404
Yeguas, Point, 306
Yellow Hill Rock, 377
Young or New Town, 406
Young Town, New Calabar River, 418
York Point, 151, 537
Yumba, Bay and Cape, 470

Zaire or Congo River, 481
Zamba Isle, 291
Zwarkops River, 556
Zwarte Lintje, River, 524

London: J. & W. Rider, Printers, 14, Bartholomew Close.